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STATEMENT ACCOMPANYING SEQUENCE LISTING

The sequence listing does not include matter that goes beyond the disclosure in the international application.

The printout of the attached Sequence Listing is identical to the computer readable sequence listing on the enclosed computer disk.

WO 2004/039958

SEQUENCE LISTING

10/53381

<110> THE GOVERNMENT OF THE UNITED STATES OF AMERICA AS
REPRESENTED BY THE SECRETARY OF THE DEPARTMENT OF HEALTH AND
HUMAN SERVICES

Valenzuela, Jesus G.
Ribeiro, Jose M.C.
Barral, Aldina
Netto, Manoel
Brodskyn, Claudia
Gomes, Regis

<120> LUTZOMYIA LONGIPALPIS POLYPEPTIDES AND METHODS OF USE

<130> 4239-67028

<150> US 60/422,303

<151> 2002-10-29

<160> 73

<170> PatentIn version 3.2

<210> 1

<211> 271

<212> PRT

<213> Lutzomyia longipalpis

<400> 1

Met Leu Gln Ile Lys His Leu Leu Ile Phe Val Gly Leu Leu Val Val
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Val Asn Ala Gln Ser Asn Tyr Cys Lys Gln Glu Ser Cys Ser Ser Gly
20 25 30

Gly Val Glu Arg Pro His Ile Gly Cys Lys Asn Ser Gly Asp Phe Ser
35 40 45

Glu Thr Cys Ser Gly Asp Ala Glu Ile Val Lys Met Asp Lys Lys Lys
50 55 60

Gln Asn Leu Leu Val Lys Met His Asn Arg Leu Arg Asp Arg Phe Ala
65 70 75 80

Arg Gly Ala Val Pro Gly Phe Ala Pro Ala Ala Lys Met Pro Met Leu
85 90 95

Lys Trp Asn Asp Glu Leu Ala Lys Leu Ala Glu Tyr Asn Val Arg Thr
100 105 110

Cys Lys Phe Ala His Asp Lys Cys Arg Ala Ile Asp Val Cys Pro Tyr
115 120 125

Ala Gly Gln Asn Leu Ala Gln Met Met Ser Tyr Pro Thr His Arg Asp
 130 135 140

Leu Asn Tyr Val Leu Lys Asn Leu Thr Arg Glu Trp Phe Trp Glu Tyr
 145 150 155 160

Arg Trp Ala Lys Gln Ser Gln Leu Asp Asn Tyr Val Gly Gly Pro Gly
 165 170 175

Lys Asp Asn Lys Gln Ile Gly His Phe Thr Ala Phe Val His Glu Lys
 180 185 190

Thr Asp Lys Val Gly Cys Ala Ile Ala Arg Phe Thr Asn Glu His Asn
 195 200 205

Phe Lys Glu Thr Leu Leu Ala Cys Asn Tyr Cys Tyr Thr Asn Met Met
 210 215 220

Lys Glu Arg Ile Tyr Thr Gln Gly Lys Pro Cys Ser Gln Cys Gln Ser
 225 230 235 240

Lys Lys Cys Gly Pro Val Tyr Lys Asn Leu Cys Asp Pro Ser Glu Lys
 245 250 255

Val Asp Pro Thr Pro Asp Val Leu Lys Gln Trp Lys His Gly Lys
 260 265 270

<210> 2

<211> 905

<212> DNA

<213> Lutzomyia longipalpis

<400> 2

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cgggaggtgt tgagagaccc catattgggt gcaaaaactc tggagatttt tccgaaactt 180

gctccggaga tgcagaaatt gttaagatgg acaagaagaa gcagaacctc cttgtgaaaa 240

tgcacaatcg cctgagagat agatttgctc gtggtgca gt gccaggttt gcaccagctg 300

cgaaaatgcc aatgcttaaa tggAACGATG aactggccaa attggcagag tacaacgtga 360

gaacgtgcaa atttgcac gataaatgcc gcgcaattga tgtctgcccc tatgctggac 420

agaatcttagc tcaa atgatg tcctatccta cccatcgaga tctaaactat gttcttaaga 480

atctcacaag ggaatggttc tggagtaca gatggctaa gcaatctcag cttgataatt 540

acgtgggtgg tcctggaaa gacaacaaac aaattggaca tttcacagct tttgtgcatg 600
 agaaaacaga caaagttgga tgcgctatag ctcgatttac aaatgagcac aatttttaagg 660
 agaccctcct agcttgcaac tactgctaca cgaatatgat gaaggagagg atctacacgc 720
 agggaaaacc ttgttcacag tgtcagagca aaaagtgtgg gccagtctac aagaacctgt 780
 gtgatccttc ggagaaggtt gatccaactc ctgatgtcct taagcaatgg aagcatggaa 840
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 aaaaaa 905

<210> 3
 <211> 159
 <212> PRT
 <213> Lutzomyia longipalpis

<400> 3

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Cys Asn Ala Glu Glu Glu Leu Ile Glu Arg Lys Leu Thr Gly Lys Thr
 20 25 30

Ile Tyr Ile Ser Thr Ile Lys Leu Pro Trp Phe Gln Ala Leu Asn His
 35 40 45

Cys Val Lys Asn Gly Tyr Thr Met Val Ser Ile Lys Thr Phe Glu Glu
 50 55 60

Asn Lys Glu Leu Leu Lys Glu Leu Lys Arg Val Ile Arg Thr Glu Asp
 65 70 75 80

Thr Gln Val Trp Ile Gly Gly Leu Lys His His Gln Phe Ala Asn Phe
 85 90 95

Arg Trp Val Ser Asp Gly Ser His Val Ala Thr Ala Ser Gly Tyr Thr
 100 105 110

Asn Trp Ala Pro Gly Glu Pro Ala Asp Ser Phe Tyr Tyr Asp Gln Phe
 115 120 125

Cys Met Ala Met Leu Phe Arg Lys Asp Gly Ala Pro Trp Asp Asp Leu
 130 135 140

Asn Cys Trp Val Lys Asn Leu Phe Val Cys Glu Lys Arg Asp Asp
 145 150 155

<210> 4
 <211> 617
 <212> DNA
 <213> Lutzomyia longipalpis

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 acttattgag agaaaagttaa cagaaaaaac gatctatatc tcaacaataa agttccgtg 180
 gttccaagct cttaatcatt gtgttaaaaa tggctacaca atgggtgtcaa ttaagacatt 240
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 aagccacgta gcaacagctt cagggtacac caattgggcc ccaggggagc cagctgattc 420
 cttctattac gatcaatttt gcatggcgat gttgttcaga aaagacggcg ctccgtggga 480
 tgatttgaat tggtgggtta agaatctttt tggttgtgag aaacgagatg attgagaggc 540
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 aaaaaaaaaa aaaaaaaaaa 617

<210> 5
 <211> 304
 <212> PRT
 <213> Lutzomyia longipalpis

<400> 5

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Thr	Ser	Asn	Gly	Ala	Leu	Thr	Gly	Asn	Glu	Ser	Ala	Ala	Asn	Ala	Ala
					20				25				30		

Pro	Leu	Pro	Val	Val	Leu	Trp	His	Gly	Met	Gly	Asp	Ser	Cys	Cys	Phe
							35		40			45			

Pro	Phe	Ser	Leu	Gly	Ser	Ile	Lys	Lys	Leu	Ile	Glu	Gln	Gln	Ile	Pro
						50		55			60				

Gly	Ile	His	Val	Val	Ser	Leu	Lys	Ile	Gly	Lys	Ser	Leu	Ile	Glu	Asp
						65		70		75			80		

Tyr	Glu	Ser	Gly	Phe	Phe	Val	His	Pro	Asp	Lys	Gln	Ile	Gln	Glu	Val
						85			90			95			

Cys Glu Ser Leu Gln Asn Asp Leu Thr Leu Ala Asn Gly Phe Asn Ala
 100 105 110

Ile Gly Phe Ser Gln Gly Ser Gln Phe Leu Arg Gly Ile Val Gln Arg
 115 120 125

Cys Ser Ser Ile Gln Val Arg Asn Leu Ile Ser Ile Gly Gly Gln His
 130 135 140

Gln Gly Val Phe Gly Leu Pro Tyr Cys Pro Ser Leu Ser Arg Lys Thr
 145 150 155 160

Cys Glu Tyr Phe Arg Lys Leu Leu Asn Tyr Ala Ala Tyr Glu Lys Trp
 165 170 175

Val Gln Lys Leu Leu Val Gln Ala Thr Tyr Trp His Asp Pro Leu Asn
 180 185 190

Glu Asp Ala Tyr Arg Thr Gly Ser Thr Phe Leu Ala Asp Ile Asn Asn
 195 200 205

Glu Arg Gln Ile Asn Asn Asp Tyr Ile Asn Asn Ile Arg Lys Leu Asn
 210 215 220

Arg Phe Val Met Val Lys Phe Leu Asn Asp Ser Met Val Gln Pro Ile
 225 230 235 240

Glu Ser Ser Phe Phe Gly Phe Tyr Ala Pro Gly Thr Asp Thr Glu Val
 245 250 255

Leu Pro Leu Lys Gln Ser Lys Ile Tyr Leu Glu Asp Arg Leu Gly Leu
 260 265 270

Gln Ser Val Pro Ile Asp Tyr Leu Glu Cys Gly Gly Asp His Leu Gln
 275 280 285

Phe Thr Lys Glu Trp Phe Ile Lys Phe Ile Ile Pro Tyr Leu Lys Gln
 290 295 300

<210> 6
<211> 1273
<212> DNA
<213> Lutzomyia longipalpis

<400> 6
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attttatgtg cagttttac taaaaatccc ttatcagcaa cccggtgtct acagtttgc	180
cacgctcagt agcatcttca aggtggtaag aaaaaatgaa actcctgcaa atcatcttct	240
ctctcttcct ggtcttttc ccgacctcaa atggggccct gaccggaaat gaaagtgcag	300
caaatgcagc tcccttgct gtcgtcctgt ggcacgggat gggcgattct tgctgcttc	360
ccttcagttt gggaaagcata aaaaaattaa ttgaacaaca aattcctggg attcatgttgc	420
ttagcctgaa aattggaaag tctctcattt aggactatga aagtggattt tttgttcatc	480
cagacaagca aattcaggaa gtttgtgagt cacttcagaa cgatctaaca ctcgcaaatg	540
gattcaatgc aattggattt tctcagggtt gtcagttcct gcgagggtctt gtgcaacgat	600
gttcttctat acaagtaagg aatctcattt ccattggagg acagcatcaa ggggtttttg	660
gtctgcccta ttgtccttcg ttgagcagaa agacttgcga atactttaga aagctcctga	720
attatgcagc ttatgaaaaa tgggtacaga aactccttagt tcaagccacc tactggcatg	780
atcctctaaa tgaggatgca tatcggactg gaagcacttt cttgtctgat ataaataatg	840
agagacaaat caataatgac tatattaata atattcgaa gctaaatcg tttgtatgg	900
taaagttcct caacgacagc atggttcagc caattgaatc tagttcttt ggattctacg	960
ctccaggaac tgatacagaa gttctccat taaaacaaag caagatttt ttggaagatc	1020
gtttggact tcaatcagta ccgatagatt atctagaatg cggaggagat catttgcaat	1080
ttacaaaaga atggttcata aagtttatca tacccatatct gaagcaataa gagctgcaat	1140
gtaattgatt aaaaaatgtt aaccatttca ggatgattgg gtgaccctt aaaaatataa	1200
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aaaaaaaaaa aaa	1273

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 <211> 102
 <212> PRT
 <213> Lutzomyia longipalpis

 <400> 7

Met Arg Asn Phe Ala Val Val Ser Leu Ala Val Ala Val Leu Leu Phe
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Cys Ala Trp Pro Ile Asn Ala Glu Asp Asn Glu Glu Val Gly Lys Ala
 20 25 30

Arg Glu Lys Arg Gly Leu Lys Asp Ala Met Glu His Phe Lys Asn Gly
 35 40 45

Phe Lys Glu Leu Thr Lys Asp Phe Lys Leu Pro Ser Leu Pro Ser Leu
 50 55 60

Pro Gly Phe Gly Lys Lys Pro Glu Ser Gly Ser Ser Glu Asp Ser Gly
 65 70 75 80

Asp Lys Thr Glu Asp Thr Ser Gly Ser Lys Asp Asp Gln Ser Lys Asp
 85 90 95

Asn Thr Val Glu Glu Ser
 100

<210> 8
<211> 466
<212> DNA
<213> Lutzomyia longipalpis

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ataatgaaga agttggaaag gcgagagaaa aaagaggctt aaaagacgca atggaacact 180
tcaaaaatgg atttaaggag ctgacaaagg actttaaact tccaaaggcctt ccaagtcttc 240
ctggatttgg taaaaaggcct gaatctggaa gttctgaaga ttctggagat aaaactgagg 300
ataccagtg 9
atctaaggac gaccaatcaa aggataatac ggtcgaagaa tcttaagaaa 360
ggcgcaaata gctattttca aagtggcgaa tgtttcttc tttatctgaa ataaatattt 420
ttaaacctt 9
cgaaacccaa aaaaaaaaaa aaaaaaaaaa aaaaaa 466

<210> 9
<211> 247
<212> PRT
<213> Lutzomyia longipalpis

<400> 9

Met Asn Phe Leu Leu Lys Ile Phe Ser Leu Leu Cys Leu Cys Gly Leu
1 5 10 15

Gly Tyr Ser Trp Gln Asp Val Arg Asn Ala Asp Gln Thr Leu Trp Ala
20 25 30

Tyr Arg Ser Cys Gln Lys Asn Pro Glu Asp Lys Asp His Val Pro Gln
35 40 45

Trp Arg Lys Phe Glu Leu Pro Asp Asp Glu Lys Thr His Cys Tyr Val
50 55 60

Lys Cys Val Trp Thr Arg Leu Gly Ala Tyr Asn Glu Asn Glu Asn Val
 65 70 75 80

Phe Lys Ile Asp Val Ile Thr Lys Gln Phe Asn Glu Arg Gly Leu Glu
 85 90 95

Val Pro Ala Gly Leu Asp Gln Glu Leu Gly Gly Ser Thr Asp Gly Thr
 100 105 110

Cys Lys Ala Val Tyr Asp Lys Ser Met Lys Phe Phe Lys Ser His Phe
 115 120 125

Met Asp Phe Arg Asn Ala Tyr Tyr Ala Thr Tyr Asp Gly Ser Asp Glu
 130 135 140

Trp Phe Ser Lys Asn Pro Asp Val Lys Pro Lys Gly Thr Lys Val Ser
 145 150 155 160

Glu Tyr Cys Lys Asn Lys Asp Asp Gly Asp Cys Lys His Ser Cys Ser
 165 170 175

Met Tyr Tyr Tyr Arg Leu Ile Asp Glu Asp Asn Leu Val Ile Pro Phe
 180 185 190

Ser Asn Leu Pro Asp Tyr Pro Glu Asp Lys Leu Glu Glu Cys Arg Asn
 195 200 205

Glu Ala Lys Ser Ala Asn Glu Cys Lys Ser Ser Val Ile Tyr Gln Cys
 210 215 220

Leu Glu Asn Ala Asp Lys Ser Ala Leu Asp Ala Ser Leu Asn Ile Leu
 225 230 235 240

Asp Glu Phe Ser Gly Arg Tyr
 245

<210> 10
<211> 955
<212> DNA
<213> Lutzomyia longipalpis

<400> 10			
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gtatagatcg tgccaaaaga atcctgaaga taaggatcac gtacctcaat ggaggaagtt			180
cgaattaccc gacgatgaaa agactcattg ctacgtcaag tgcgtatgga cgcgtttggg			240

agcttacaat gaaaatgaaa atgtttcaa aattgatgtc attactaagc aatthaatga	300
acgtggcccta gaagttccgg ctggacttga tcaagaattt ggtggttcta cagatggaac	360
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<210> 11

<211> 325

<212> PRT

<213> Lutzomyia longipalpis

<400> 11

Met	Phe	Leu	Lys	Trp	Val	Val	Cys	Ala	Phe	Ala	Thr	Val	Phe	Leu	Val
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Gly	Val	Ser	Gln	Ala	Ala	Pro	Pro	Gly	Val	Glu	Trp	Tyr	His	Phe	Gly
20						25						30			

Leu	Ile	Ala	Asp	Met	Asp	Lys	Ile	Asp	Lys	Ser	Ile	Ala	Ser	Asp	Lys	Thr	Thr
35							40						45				

Phe	Asn	Ser	Val	Leu	Lys	Ile	Asp	Glu	Leu	Arg	His	Asn	Thr	Lys	Thr	
50							55					60				

Asp	Gln	Tyr	Ile	Tyr	Val	Arg	Ser	Arg	Val	Lys	Lys	Pro	Val	Ser	Thr	
65							70			75			80			

Arg	Tyr	Gly	Phe	Lys	Gly	Arg	Gly	Ala	Glu	Leu	Ser	Glu	Ile	Val	Val	
85									90				95			

Phe	Asn	Asn	Lys	Leu	Tyr	Thr	Val	Asp	Asp	Lys	Ser	Gly	Ile	Thr	Phe	
100							105						110			

Arg Ile Thr Lys Asp Gly Lys Leu Phe Pro Trp Val Ile Leu Ala Asp
115 . 120 . 125

Ala Asp Gly Gln Arg Pro Asp Gly Phe Lys Gly Glu Trp Ala Thr Ile
130 . 135 . 140

Lys Asp Asp Thr Ile Tyr Val Gly Ser Thr Gly Met Leu Lys Phe Thr
145 . 150 . 155 . 160

Ser Ser Leu Trp Val Lys Lys Ile Thr Lys Asp Gly Val Val Thr Ser
165 . 170 . 175

His Asp Trp Thr Asp Tyr Arg Lys Ile Leu Lys Ala Leu Asn Met
180 . 185 . 190

Pro Asn Gly Phe Val Trp His Glu Ala Val Thr Trp Ser Pro Phe Arg
195 . 200 . 205

Lys Gln Trp Val Phe Met Pro Arg Lys Cys Ser Arg His Pro Phe Ser
210 . 215 . 220

Gln Glu Leu Glu Glu Arg Thr Gly Cys Asn Lys Ile Val Thr Ala Asp
225 . 230 . 235 . 240

Glu Asn Phe Asn Asp Ile Gln Val Ile His Ile Gln Asp Gln Pro Tyr
245 . 250 . 255

Asn Leu Ala Ser Gly Phe Ser Ser Phe Arg Phe Ile Pro Gly Thr Lys
260 . 265 . 270

Asn Glu Arg Leu Leu Ala Leu Arg Thr Val Glu Gln Glu Asp Gln Val
275 . 280 . 285

Lys Thr Trp Ala Val Val Met Asp Met Lys Gly Thr Val Leu Met Tyr
290 . 295 . 300

Glu Lys Glu Leu Tyr Asp Glu Lys Phe Glu Gly Leu Ala Phe Phe Gly
305 . 310 . 315 . 320

Gly Ile Lys Lys Asn
325

<210> 12
<211> 1071
<212> DNA
<213> Lutzomyia longipalpis

<400> 12
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tcgatgaatt gcgccacaac acaaaaacgg atcaatacat ttatgtgcgt agtcgagtga 240
agaagcccg ttcacgagg tatgggtca aaggacgcgg tgccgaaattg tcggaaattg 300
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tggatatgaa aggaacagtt ctgatgtacg aaaaggaact ttatgacgaa aaattcgaag 960
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ataataaaatt ttatttcatt taaaaaaaaaaaaaaaaaaaaaaaaa a 1071

<210> 13
<211> 160
<212> PRT
<213> *Lutzomyia longipalpis*

<400> 13

Met Ala Leu Lys Phe Leu Pro Val Leu Leu Ser Cys Phe Ala Met
1 5 10 15

Ser Thr Ala Leu Gln Val Thr Glu Lys Glu Leu Ser Asp Gly Lys Lys
20 25 30

Ile Phe Ile Ser Lys Val Glu Leu Asn Trp Phe Glu Ala Leu Asp Phe
35 40 45

Cys Ile His Arg Gly Leu Thr Leu Leu Ser Ile Lys Ser Ala Lys Glu
50 55 60

Asn Val Asp Val Thr Lys Ala Ile Arg Ala Glu Leu Asn Phe Asp Ser			
65	70	75	80

Lys Lys Leu Ala His Val Trp Thr Gly Gly Ile Arg His Ser Gln Asp		
85	90	95

Lys Tyr Phe Arg Trp Ile Asn Asp Gly Thr Lys Val Val Lys Arg Val		
100	105	110

Tyr Thr Asn Trp Phe Thr Gly Glu Pro Asn Asn Gly Tyr Trp Lys Asp		
115	120	125

Glu Phe Cys Leu Glu Ile Tyr Tyr Lys Thr Glu Glu Gly Lys Trp Asn		
130	135	140

Asp Asp Lys Cys His Val Lys His His Phe Val Cys Gln Glu Lys Lys			
145	150	155	160

<210> 14
<211> 648
<212> DNA
<213> Lutzomyia longipalpis

<400> 14	
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tctaagctgc ttccgaatga gcacggcaact acaagttact gagaaggaac tttctgtatgg	180
aaaaaaagatc ttcatctcca aagttgagct aaactggttc gaagctcttg atttctgtat	240
ccatcgtggc cttacgttgc tctcaattaa atccgccaag gaaaatgttag acgtaacaaa	300
agcaattcgg gctgaattga attttgattc aaagaaattt gctcatgtgt ggactggagg	360
tattcgccat agtcaagata agtatttccg ttggataaat gatggacta aagttgttaa	420
acgagtctac accaatttgtt tcactggaga accaaataat gttactgga aggatgaatt	480
ttgtctggaa atttactata aaaccgaaga agggaaagtgg aatgatgata aatgtcacgt	540
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cagttcagaa ttgaaaagcc aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	648

<210> 15
<211> 301
<212> PRT
<213> Lutzomyia longipalpis
<400> 15

Met Asn Ser Ile Asn Phe Leu Ser Ile Val Gly Leu Ile Ser Phe Gly			
1	5	10	15

Phe Ile Val Ala Val Lys Cys Asp Gly Asp Glu Tyr Phe Ile Gly Lys
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Tyr Lys Glu Lys Asp Glu Thr Leu Phe Phe Ala Ser Tyr Gly Leu Lys
35 40 45

Arg Asp Pro Cys Gln Ile Val Leu Gly Tyr Lys Cys Ser Asn Asn Gln
50 55 60

Thr His Phe Val Leu Asn Phe Lys Thr Asn Lys Lys Ser Cys Ile Ser
65 70 75 80

Ala Ile Lys Leu Thr Ser Tyr Pro Lys Ile Asn Gln Asn Ser Asp Leu
85 90 95

Thr Lys Asn Leu Tyr Cys Gln Thr Gly Gly Ile Gly Thr Asp Asn Cys
100 105 110

Lys Leu Val Phe Lys Lys Arg Lys Arg Gln Ile Ala Ala Asn Ile Glu
115 120 125

Ile Tyr Gly Ile Pro Ala Lys Lys Cys Ser Phe Lys Asp Arg Tyr Ile
130 135 140

Gly Ala Asp Pro Leu His Val Asp Ser Tyr Gly Leu Pro Tyr Gln Phe
145 150 155 160

Asp Gln Glu His Gly Trp Asn Val Glu Arg Tyr Asn Ile Phe Lys Asp
165 170 175

Thr Arg Phe Ser Thr Glu Val Phe Tyr His Lys Asn Gly Leu Phe Asn
180 185 190

Thr Gln Ile Thr Tyr Leu Ala Glu Glu Asp Ser Phe Ser Glu Ala Arg
195 200 205

Glu Ile Thr Ala Lys Asp Ile Lys Lys Phe Ser Ile Ile Leu Pro
210 215 220

Asn Glu Glu Tyr Lys Arg Ile Ser Phe Leu Asp Val Tyr Trp Phe Gln
225 230 235 240

Glu Thr Met Arg Lys Lys Pro Lys Tyr Pro Tyr Ile His Tyr Asn Gly
245 250 255

Glu Cys Ser Asn Glu Asn Lys Thr Cys Glu Leu Val Phe Asp Thr Asp
 260 265 270

Glu Leu Met Thr Tyr Ala Leu Val Lys Val Phe Thr Asn Pro Glu Ser
 275 280 285

Asp Gly Ser Arg Leu Lys Glu Glu Asp Leu Gly Arg Gly
 290 295 300

<210> 16
<211> 1021
<212> DNA
<213> *Lutzomyia longipalpis*

<400> 16
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gatgaatatt tcattggaaa atacaagaa aaagatgaga cactgtttt tgcaagctac 180
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cacaaaaatg gtttatttaa cacccaaata acttatttgg ctgaagaaga ttccttctct 660
gaagctcgag agattactgc gaaggatatt aagaagaagt tttcaattat ttgcggcaat 720
gaagagtata agaggattag tttcttggac gtttattggt tccaggagac tatgcgaaaa 780
aaggctaaat atccctacat tcactacaat ggagaatgca gcaatgagaa taaaacttgt 840
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a 1021

<210> 17
<211> 161
<212> PRT
<213> *Lutzomyia longipalpis*

<400> 17

Met Ala Phe Ser Asn Thr Leu Phe Val Leu Phe Val Ser Phe Leu Thr
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Phe Cys Gly Ala Asp Gln Thr Leu Ile Glu Lys Glu Leu Thr Gly Arg
 20 25 30

Thr Val Tyr Ile Ser Lys Ile Lys Leu Asn Trp Asn Asp Ala Phe Asp
 35 40 45

Tyr Cys Ile Arg Asn Gly Leu Thr Phe Ala Lys Ile Lys Ser Ala Glu
 50 55 60

Glu Asn Thr Glu Leu Ser Glu Lys Leu Lys Thr Val Ile Arg Thr Glu
 65 70 75 80

Glu Phe Gln Val Trp Ile Gly Gly Ile Glu His His Gln Asp Ser Ser
 85 90 95

Phe Arg Trp Val Ser Asp Ser Gln Pro Ile Thr Asn Lys Leu Gly Tyr
 100 105 110

115 120 125

Glu Tyr Cys Leu Glu Ile Leu Phe Arg Lys Glu Asp Gly Lys Trp Asn
 130 135 140

Asp Phe Pro Cys Ser Ala Arg His His Phe Val Cys Glu Lys Arg Thr
 145 150 155 160

Lys

<210> 18
<211> 586
<212> DNA
<213> Lutzomyia longipalpis

<400> 18
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agtttttaa cgttttgtgg cgctgatcag acacttattg agaaggaaatt aaccggaaga 60
120
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aatggcctca ctttgctaa gattaaatca gctgaagaaa acaccgaact gagtgagaaa 240
ctcaagacag tcattcgtac ggaggagttt caagtttggta ttggaggcat tgaacatcat 300
caagacagtt cttccgctg ggtaagcgac tcccaaccaa taaccaacaa attgggctac 360

aaatacacaa actggaatac cgagagcccc acaaattacc aaaacaacga atattgcttg 420
 gaaaatattat tccggaagga agatggaaaa tggaatgatt ttccctgcag tgcaagacat 480
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<210> 19
<211> 105
<212> PRT
<213> Lutzomyia longipalpis

<400> 19

Met Gln Asn Phe Leu Leu Val Ser Leu Ala Leu Ala Ala Leu Met Leu
1 5 10 15

Cys Ala Glu Ala Lys Pro Tyr Asp Phe Pro Leu Tyr Gln Asp Leu Ile
20 25 30

Gln Gly Val Ile Gln Arg Glu Ser Gln Ala Glu Arg Glu Lys Arg Ser
35 40 45

Pro Asn Glu Asp Tyr Glu Lys Gln Phe Gly Asp Ile Val Asp Gln Ile
50 55 60

Lys Glu Ile Ser Phe Asn Val Met Lys Met Pro His Phe Gly Ser Ser
65 70 75 80

Asp Asp Asn Arg Asp Asp Gly Glu Tyr Val Asp His His Tyr Gly Asp
85 90 95

Glu Asp Asp Arg Asp Tyr Asp His Tyr
100 105

<210> 20
<211> 457
<212> DNA
<213> Lutzomyia longipalpis

<400> 20
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gctgccttaa tgctatgtgc cgaagcaaag ccgtacgatt ttccgcctta tcaggactta 120
attcagggcg ttattcagcg/cgaaagtcaa gctgagaggg agaagagaag ccccaatgag 180
gactatgaga agcaatttgg ggatattgtt gatcaaatta aggaaattag tttcaatgtc 240
atgaaaatgc cccattttgg aagctctgat gataatcgtg atgatggcga gtacgttgc 300

catcattatg gtgacgaaga tgatcgat tatgatcatt actaaatact acttgctcct 360
 gctgaatgac ttgaaggaat catttttg caaaaatatc catcaaatta ttgaattaat 420
 aaagttgcaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 457

<210> 21
 <211> 157
 <212> PRT
 <213> Lutzomyia longipalpis
 <400> 21

Met Lys Phe Tyr Ile Phe Gly Val Phe Leu Val Ser Phe Leu Ala Leu
 1 5 10 15

Cys Asn Ala Glu Asp Tyr Asp Lys Val Lys Leu Thr Gly Arg Thr Val
 20 25 30

Tyr Ile Ser Arg Ser Lys Ala Pro Trp Phe Thr Ala Leu Asp Asn Cys
 35 40 45

Asn Arg Arg Phe Thr Phe Ala Met Ile Lys Ser Gln Lys Glu Asn Glu
 50 55 60

Glu Leu Thr Asn Ala Leu Leu Ser Val Ile Lys Ser Asp Glu Glu Asn
 65 70 75 80

Val Trp Ile Gly Gly Leu Arg His Asp Leu Asp Asp Tyr Phe Arg Trp
 85 90 95

Ile Ser Phe Gly Thr Ala Leu Ser Lys Thr Ser Tyr Thr Asn Trp Ala
 100 105 110

Pro Lys Glu Pro Thr Gly Arg Pro His Arg Thr Gln Asn Asp Glu Phe
 115 120 125

130 135 140

Cys Trp Arg Lys Arg Leu Tyr Val Cys Glu Lys Arg Asp
 145 150 155

<210> 22
 <211> 596
 <212> DNA
 <213> Lutzomyia longipalpis

<400> 22
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at	aaa	aaactt	act	ggaaagaa	ctg	tttacat	ctc	ccagatca	aagg	ctccgt	gtt	cacagc	180		
ttt	agaca	aat	tgtaatcg	ttt	acg	cttc	ccac	cttcg	ccatg	atca	agt	tctc	240		
taa	gag	acta	acaat	gcgc	ttt	taa	agtgt	aatt	aaatct	gac	gaag	aaa	atg	tttggat	300
gg	agg	gtt	agg	acg	ttt	ggat	gacta	ctt	ccgtt	gg	at	tag	ttt	g	360
ca	aaagact	tcgt	acac	cca	ttt	ttt	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	420
aaat	atgat	at	ttt	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	480
tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	540
tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	tttgc	596

<210> 23

<211> 412

<212> PRT

<213> Lutzomyia longipalpis

<400> 23

Met	Arg	Phe	Phe	Phe	Val	Phe	Leu	Ala	Ile	Val	Leu	Phe	Gln	Gly	Ile
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					20			25					30		

Asp	Gly	Leu	Asp	Thr	Asp	Asp	Tyr	Asn	Pro	Lys	Phe	Asn	Ile	Pro	Thr
					35			40				45			

Gly	Leu	Ala	Val	Asp	Pro	Glu	Gly	Tyr	Arg	Leu	Phe	Ile	Ala	Ile	Pro
					50			55				60			

Arg	Arg	Lys	Pro	Lys	Val	Pro	Tyr	Thr	Val	Ala	Glu	Leu	Asn	Met	Val
					65			70			75		80		

Met	Asn	Pro	Gly	Phe	Pro	Val	Glu	Arg	Ala	Pro	Ser	Phe	Glu	Lys	Phe
					85			90				95			

Lys	Lys	Phe	Asn	Gly	Glu	Gly	Lys	Lys	Asp	Leu	Val	Asn	Val	Tyr	Gln
					100			105				110			

Pro	Val	Ile	Asp	Asp	Cys	Arg	Arg	Leu	Trp	Val	Leu	Asp	Ile	Gly	Lys
								115			120		125		

Val	Glu	Tyr	Thr	Gly	Gly	Asp	Ala	Asp	Gln	Tyr	Pro	Lys	Gly	Lys	Pro
						130		135			140				

Thr Leu Ile Ala Tyr Asp Leu Lys Lys Asp His Thr Pro Glu Ile His
145 150 155 160

Arg Phe Glu Ile Pro Asp Asp Leu Tyr Ser Ser Gln Val Glu Phe Gly
165 170 175

Gly Phe Ala Val Asp Val Val Asn Thr Lys Gly Asp Cys Thr Glu Ser
180 185 190

Phe Val Tyr Leu Thr Asn Phe Lys Asp Asn Ser Leu Ile Val Tyr Asp
195 200 205

Glu Thr Gln Lys Lys Ala Trp Lys Phe Thr Asp Lys Thr Phe Glu Ala
210 215 220

225 230 235 240

Lys Val Gly Leu Phe Gly Ile Ala Leu Gly Asp Arg Asp Glu Met Gly
245 250 255

His Arg Pro Ala Cys Tyr Ile Ala Gly Ser Ser Thr Lys Val Tyr Ser
260 265 270

Val Asn Thr Lys Glu Leu Lys Thr Glu Asn Gly Gln Leu Asn Pro Gln
275 280 285

Leu His Gly Asp Arg Gly Lys Tyr Thr Asp Ala Ile Ala Leu Ala Tyr
290 295 300

Asp Pro Glu His Lys Val Leu Tyr Phe Ala Glu Ser Asp Ser Arg Gln
305 310 315 320

Val Ser Cys Trp Asn Val Asn Met Glu Leu Lys Pro Asp Asn Thr Asp
325 330 335

Val Ile Phe Ser Ser Ala Arg Phe Thr Phe Gly Thr Asp Ile Leu Val
340 345 350

Asp Ser Lys Gly Met Leu Trp Ile Met Ala Asn Gly His Pro Pro Val
355 360 365

Glu Asp Gln Glu Lys Ile Trp Lys Met Arg Phe Val Asn Arg Lys Ile
370 375 380

Arg Ile Met Lys Val Asp Thr Glu Arg Val Phe Lys Tyr Ser Arg Cys

385

390

395

400

Asn Pro Asn Tyr Lys Pro Pro Lys Glu Ile Glu Val
 405 410

<210> 24
<211> 1409
<212> DNA
<213> Lutzomyia longipalpis

<400> 24
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 attcgatgga ttggatacag atgactacaa tccaaagttc aacattccaa cgggtttggc 180
 agttgatccc gaaggatata ggctcttcat agccatccca aggagaaagc caaaggttcc 240
 ctacactgtg gctgaactga atatggtcat gaatcccgga tttcccgctg agagagctcc 300
 gagctttgag aaattcaaaa aattcaatgg cgagggcaaa aaggatcttgc ttaatgtgta 360
 tcagccagtc attgatgatt gtcgtcgct ttgggtgctt gacattggga aggtggaata 420
 caccggtggt gatgctgatc aatatccaa aggaaagcct accctaattt cctacgacct 480
 caagaaggat catactccgg aaattcatcg atttggaaatt ccagacgatc tctatagctc 540
 acaagttgaa tttggtgat ttgccgttga tggtttaac acgaaaggag actgtacgga 600
 gtcatttgc tacctgacca atttcaagga taactctcta attgtctacg atgagacaca 660
 aaagaaagct tggaaattca cagataaaac atttgaagct gataaggaat ccacgttctc 720
 ctactcgggaa gaggaacacaa tgaagtacaa agtcggcttt tttggatag ctctgggtga 780
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 aaaaaaaaaaaaaaaa aaaaaaaaaaaaaaaa aaaaaaaaaaaaaaaa 1409

<210> 25
<211> 295
<212> PRT
<213> Lutzomyia longipalpis

<400> 25

Met Ile Lys Glu Val Phe Ser Leu Ala Leu Leu Val Ala Leu Ala Gln
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Cys Ala Asn Glu Ile Pro Ile Asn Arg Gln Gly Lys Asp Tyr Pro Val
20 25 30

Pro Ile Ile Asp Pro Asn Lys Ser Ser Ser Asp Asp Tyr Phe Asp Asp
35 40 45

Arg Phe Tyr Pro Asp Ile Asp Asp Glu Gly Ile Ala Glu Ala Pro Lys
50 55 60

Asp Asn Arg Gly Lys Ser Arg Gly Gly Ala Ala Gly Ala Arg Glu
65 70 75 80

Gly Arg Leu Gly Thr Asn Gly Ala Lys Pro Gly Gln Gly Gly Thr Arg
85 90 95

Pro Gly Gln Gly Gly Thr Arg Pro Gly Gln Gly Gly Thr Arg Pro Gly
100 105 110

Gln Gly Gly Thr Arg Pro Gly Gln Gly Gly Thr Arg Pro Gly Gln Gly
115 120 125

Arg Thr Lys Pro Ala Gln Gly Thr Thr Arg Pro Ala Gln Gly Thr Arg
130 135 140

Asn Pro Gly Ser Val Gly Thr Lys Glu Ala Gln Asp Ala Ser Lys Gln
145 150 155 160

Gly Gln Gly Lys Arg Arg Pro Gly Gln Val Gly Gly Lys Arg Pro Gly
165 170 175

Gln Ala Asn Ala Pro Asn Ala Gly Thr Arg Lys Gln Gln Lys Gly Ser
180 185 190

Arg Gly Val Gly Arg Pro Asp Leu Ser Arg Tyr Lys Asp Ala Pro Ala
195 200 205

Lys Phe Val Phe Lys Ser Pro Asp Phe Ser Gly Glu Gly Lys Thr Pro

210

215

220

Thr Val Asn Tyr Phe Arg Thr Lys Lys Lys Glu His Ile Val Thr Arg
 225 230 235 240

Gly Ser Pro Asn Asp Glu Phe Val Leu Glu Ile Leu Asp Gly Asp Pro
 245 250 255

Thr Gly Leu Gly Leu Lys Ser Glu Thr Ile Gly Lys Asp Thr Arg Leu
 260 265 270

Val Leu Glu Asn Pro Asn Gly Asn Ser Ile Val Ala Arg Val Lys Ile
 275 280 285

Tyr Lys Asn Gly Tyr Ser Gly
 290 295

<210> 26
<211> 989
<212> DNA
<213> *Lutzomyia longipalpis*

<400> 26
actaaagcgt ctcaccgaaa tcagggaaaa tgattaagga agtttctct ctggctctac 60
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cagttccgat cattgatcca aataaatcat ctccggatga ttatttcgat gatcgcttct 180
accctgatat tgatgatgag ggcatacgctg aggctcctaa ggataatagg ggaaaatccc 240
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caggtcaggg tggaactagg ccaggtcagg gtggacttag acctggccaa ggtagaacta 420
agcctgctca ggaaactact aggccagctc agggacttag aaatccagga tcggttggta 480
cggaaagaagc ccaggatgcg tcaaaacaag gtcaaggtaa aagaaggcca gggcaagttg 540
gtggtaaaag accaggacaa gcaaattgctc ctaatgcagg cactagaaag caacagaaaag 600
gcagtagagg cgtttggagg cctgatctat cgcgctacaa agatccccct gctaaattcg 660
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cgaagaagaa ggagcacatt gtgaccctgt gtagtcctaa tgatgaattt gttctggaga 780
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acggttattc aggatgaaga agaaatcctt tgatttcccc cccccctct tcctttaaaa 960

ttcaacataa taaaaaaaaaaa aaaaaaaaa

989

<210> 27
<211> 148
<212> PRT
<213> Lutzomyia longipalpis

<400> 27

Leu Leu Val Lys Arg Ser Gln Ala Phe Leu Pro Ser Asp Pro Ser Ile
20 25 30

Cys Val Lys Asn Leu Val Leu Asp Thr Gly Arg Thr Cys Glu Glu Ser
 35 40 45

Glu Tyr Phe Pro Asp Ile Lys Asn Val Lys Asn Gly Lys Arg Val Tyr
50 55 60

Ile Val Cys Thr Asp Ser Asp Ala Val Asp Tyr Lys Phe Tyr Ile Cys
65 70 75 80

Phe Asp Met Asn Arg Leu Ser Gly Pro Pro Tyr Pro Glu Glu Glu Ile
85 90 95

Leu Arg Glu Ser Thr Val Thr Tyr Ala Gln Ile Tyr Glu Leu Met Thr
100 105 110

Thr Glu Thr Glu Thr Lys Lys Pro Lys Lys Lys Pro Lys Asn Ser
115 120 125

Lys Thr Asp Asp Pro Pro Ala Ile Arg Pro Gly Phe Ser Phe Arg Asn
130 135 140

Ser Ile Ser Val
145

<210> 28
<211> 826
<212> DNA
<213> *Lutzomyia longipalpis*

<400> 28

gtttttccat gagtgttca ttaacaaaat gaattcagta aacacattaa ttttaactct 60

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tatctgtgtt aaaaatttag tattggatac aggaaggact tgtqaqqaaa qtqaatatcc 180

tccggatatac aagaacgtta aaaatggaaa aagagttac attgtctgca ctgattcaga	240
tgcagttgat tataaatttt atatttgttt cgatatgaat cgtcttcgt gaccaccgt	300
tcctgaggaa gaaatccttc gtgaatcaac ggttaacttat gcccaaattt atgagctgat	360
gactacggaa accactgaaa caaaaagcc aaaaaagaaa ccaaagaatt caaaaacgga	420
cccagaccct ccagcaattc gtccaggatt ttcatttaga aattcaattt ctgtttaatt	480
ttacaattta ttttcaaaga aaaatgatat ttcgaaatat tctatacaaa aaaacaacag	540
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aatcaattta caaattcagc catttgagat gcaacaaata tatacaattc aacgatataa	780
actttccaca agggaaaactt tcaaccaaaa aaaaaaaaaa aaaaaaa	826

<210> 29
<211> 397
<212> PRT
<213> Lutzomyia longipalpis

<400> 29

Met Lys Leu Phe Phe Leu Tyr Thr Phe Gly Leu Val Gln Thr Ile
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Phe Gly Val Glu Ile Lys Gln Gly Phe Lys Trp Asn Lys Ile Leu Tyr
20 25 30

Glu Gly Asp Thr Ser Glu Asn Phe Asn Pro Asp Asn Asn Ile Leu Thr
35 40 45

Ala Phe Ala Tyr Asp Pro Glu Ser Gln Lys Leu Phe Leu Thr Val Pro
50 55 60

Arg Lys Tyr Pro Glu Thr Met Tyr Thr Leu Ala Glu Val Asp Thr Glu
65 70 75 80

Lys Asn Ser Phe Glu Ser Gly Asp Thr Ser Pro Leu Leu Gly Lys Phe
85 90 95

Ser Gly His Glu Thr Gly Lys Glu Leu Thr Ser Val Tyr Gln Pro Val
100 105 110

Ile Asp Glu Cys His Arg Leu Trp Val Val Asp Val Gly Ser Val Glu
115 120 125

Arg Asn Ser Asp Gly Thr Glu Gly Gln Pro Glu His Asn Pro Thr Leu
130 135 140

Val Ala Tyr Asp Leu Lys Glu Ala Asn Tyr Pro Glu Val Ile Arg Tyr
145 150 155 160

Thr Phe Pro Asp Asn Ser Ile Glu Lys Pro Thr Phe Leu Gly Gly Phe
165 170 175

Ala Val Asp Val Val Lys Pro Asp Glu Cys Ser Glu Thr Phe Val Tyr
180 185 190

Ile Thr Asn Phe Leu Thr Asn Ala Leu Ile Val Tyr Asp His Lys Asn
195 200 205

Lys Asp Ser Trp Thr Val Gln Asp Ser Thr Phe Gly Pro Asp Lys Lys
210 215 220

Ser Lys Phe Asp His Asp Gly Gln Gln Tyr Glu Tyr Glu Ala Gly Ile
225 230 235 240

Phe Gly Ile Thr Leu Gly Glu Arg Asp Asn Glu Gly Asn Arg Gln Ala
245 250 255

Tyr Tyr Leu Val Ala Ser Ser Thr Lys Leu His Ser Ile Asn Thr Lys
260 265 270

Glu Leu Lys Gln Lys Gly Ser Lys Val Asn Ala Asn Tyr Leu Gly Asp
275 280 285

Arg Gly Glu Ser Thr Asp Ala Ile Gly Leu Val Tyr Asp Pro Lys Thr
290 295 300

Lys Thr Ile Phe Phe Val Glu Ser Asn Ser Lys Arg Val Ser Cys Trp
305 310 315 320

Asn Thr Gln Glu Thr Leu Asn Lys Asp Lys Ile Asp Val Ile Tyr His
325 330 335

Asn Ala Asp Phe Ser Phe Gly Thr Asp Ile Ser Ile Asp Ser Gln Asp
340 345 350

Asn Leu Trp Phe Leu Ala Asn Gly Leu Pro Pro Leu Glu Asn Ser Asp
355 360 365

Lys Phe Val Phe Thr Lys Pro Arg Tyr Gln Ile Phe Lys Val Asn Ile
370 375 380

Gln Glu Ala Ile Ala Gly Thr Lys Cys Glu Lys Asn Leu
385 390 395

<210> 30
<211> 1325
<212> DNA
<213> *Lutzomyia longipalpis*

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aggcgatac atcagaaaac ttcaatccag ataacaacat ctttacggct tttgcgtacg 180
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tcacaaactt cctcaccaac gccctcatag tatacgatca taagaataag gactcctgga 660

agtatgaata cgaagcagga atcttcgggaa ttacccttgg agagagagat aacgaaggaa 780
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taatctatca caatgcagac tttcccttgg gaacagatat atcgattgtat agtcaggata 1080
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aaaaaa 1325

<210> 31
<211> 350
<212> PRT
<213> Lutzomyia longipalpis

<400> 31

Met Thr Phe Leu Ile Ile Leu Gly Ala Phe Leu Leu Val Gln Ile Ile
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Thr Ala Ser Ala Leu Gly Leu Pro Glu Gln Phe Lys Gly Leu Glu Asp
20 25 30

Leu Pro Lys Lys Pro Leu Ala Glu Thr Tyr Tyr His Glu Gly Leu Asn
35 40 45

Asp Gly Lys Thr Asp Glu Met Val Asp Ile Phe Lys Ser Leu Ser Asp
50 55 60

Glu Phe Lys Phe Ser Asp Glu Asn Leu Asp Val Gly Glu Glu Lys Asn
65 70 75 80

Tyr Lys Lys Arg Asp Ile Thr Gln Asn Ser Val Ala Arg Asn Phe Leu
85 90 95

Ser Asn Val Lys Gly Ile Pro Ser Met Pro Ser Leu Pro Ser Met Pro
100 105 110

Ser Met Pro Ser Ile Pro Ser Leu Trp Ser Ser Gln Thr Gln Ala Ala
115 120 125

Pro Asn Thr Ala Leu Ala Leu Pro Glu Ser Asp Tyr Ser Leu Leu Asp
130 135 140

Met Pro Asn Ile Val Lys Asn Phe Leu Lys Glu Thr Arg Asp Leu Tyr
145 150 155 160

Asn Asp Val Gly Ala Phe Leu Lys Ala Ile Thr Glu Ala Leu Thr Asn
165 170 175

Arg Ser Ser Ser Ser Gln Leu Leu Ser Ser Pro Met Val Ser Thr Asn
180 185 190

Lys Thr Lys Glu Phe Ile Arg Asn Glu Ile Gln Lys Val Arg Lys Val
195 200 205

Arg Asn Phe Val Gln Glu Thr Leu Gln Lys Ile Arg Asp Ile Ser Ala
210 215 220

Ala Ile Ala Lys Lys Val Lys Ser Ser Glu Cys Leu Ser Asn Leu Thr
 225 230 235 240

Asp Ile Lys Gly Leu Val Ser Asp Gly Ile Asn Cys Leu Lys Glu Lys
 245 250 255

Phe Asn Asp Gly Lys Arg Ile Ile Leu Gln Leu Tyr Asn Asn Leu Leu
 260 265 270

Lys Gly Leu Lys Ile Pro Asn Asp Leu Met Val Glu Leu Lys Lys Cys
 275 280 285

Asp Thr Asn Gln Asn Asn Thr Leu Gly Arg Ile Ile Cys Tyr Phe Leu
 290 295 300

Thr Pro Leu Gln Leu Glu Lys Glu Gln Ile Leu Leu Pro Val Glu Phe
 305 310 315 320

Ile Lys Arg Ile Leu Glu Leu Thr His Tyr Phe Ser Thr Met Lys Glu
 325 330 335

Asp Leu Ile Asn Cys Gly Ile Thr Thr Ile Ala Ser Ile Thr
 340 345 350

<210> 32

<211> 1275

<212> DNA

<213> Lutzomyia longipalpis

<400> 32

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ttgggtgcatt tctccttggtt caaatttatta cagttcagc ttttaggattt cctgaacagt 120

ttaaagggttt agaggattta cctaaaaaac ctttggcaga gacttattat cacgaaggat 180

tgaatgtgg aaaaacggat gaaatggtgg atattttaa aagtcttagc gatgaattta 240

aattcagtga tgaaaattta gatgttggtg aggagaaaa ttacaagaaa cgtgatataa 300

ccaaaaattt cagtggcaagg aacttcctat caaacgtaaa gggaaattcct tcaatgccat 360

cactcccttc aatgccttca atgcctatcaa ttcccttact ttgggtcaagt cagacacagg 420

cggcaccaaa taccgcactt gcccttcctg aatctgatta ttcccttcta gatatgccga 480

atattgtgaa aaatttccta aaggaaacaa gagacctcta taacgatgtt ggagctttc 540

ttaaggcaat tacagaagct ttaacaaata gatcttcata atctcaactt ctccctccc 600

caatggtgag cacgaataaa accaaagaat ttattcgaa tgaaatacaa aaagtccgaa 660

aagtgagaaa	ttcgtccag	gaaactttc	agaaaatccg	agacatttct	gctgctattg	720
ccaaaaagg	aaaatcatca	gaatgtctgt	ccaatcttac	ggacatcaaa	ggacttgtat	780
cagacggaa	taattgttta	aaggaaaaat	tcaatgatgg	aaaacgaatt	atcctgcaat	840
tgtacaataa	tttactaaaa	ggactcaaaa	ttccaaatga	cctaatggtt	gaattgaaga	900
aatgtgatac	aaatcaaaac	aatactttgg	gaagaataat	ctgttatttt	ttgacaccat	960
tgcaactgga	aaaagaacaa	attcttctac	ctgtagaatt	tataaagcgc	attcttgaat	1020
taacccacta	ctttccaca	atgaaagaag	atcttatcaa	ctgtggcatc	acaacgattg	1080
catccattac	gtaaaaaaatg	gaaaaatgtg	ccggtgaaat	gcttgaatc	accaaagaaa	1140
tttcatcgca	aataacagtt	ccagaataac	caaattttaa	tgattacttc	tcaagaaaaa	1200
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aaaaaaaaaa	aaaaaa					1275

<210> 33
<211> 60
<212> PRT
<213> Lutzomyia longipalpis

<400> 33

Met	Leu	Lys	Ile	Val	Leu	Phe	Leu	Ser	Val	Leu	Ala	Val	Leu	Val	Ile
1	.			5				10					15		

Cys	Val	Ala	Ala	Met	Pro	Gly	Ser	Asn	Val	Pro	Trp	His	Ile	Ser	Arg
20							25					30			

Glu	Glu	Leu	Glu	Lys	Leu	Arg	Glu	Ala	Arg	Lys	Asn	His	Lys	Ala	Leu
35					40					45					

Glu	Lys	Ala	Ile	Asp	Glu	Leu	Ile	Asp	Lys	Tyr	Leu
50					55				60		

<210> 34
<211> 413
<212> DNA
<213> Lutzomyia longipalpis

<400> 34															
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gagaagagct	tgagaagctt	cgtgaagctc	gaaaagaatca	caaggcactc	gagaaggcaa	180									
ttgatgaatt	aattgacaaa	tatctctgat	tttgaagagc	aaggaagagg	aaataaacgg	240									

ccgaggaagg attttctta gagattcttc ttttattac ttcaaaccta acttcaaaat 300
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 aaataaataa agaatgtcag aagcaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 413

<210> 35
 <211> 120
 <212> PRT
 <213> Lutzomyia longipalpis
 <400> 35

Met Lys Phe Ser Cys Pro Val Phe Val Ala Ile Phe Leu Leu Cys Gly
 1 5 10 15

Phe Tyr Arg Val Glu Gly Ser Ser Gln Cys Glu Glu Asp Leu Lys Glu
 20 25 30

Glu Ala Glu Ala Phe Phe Lys Asp Cys Asn Glu Ala Lys Ala Asn Pro
 35 40 45

Gly Glu Tyr Glu Asn Leu Thr Lys Glu Glu Met Phe Glu Glu Leu Lys
 50 55 60

Glu Tyr Gly Val Ala Asp Thr Asp Met Glu Thr Val Tyr Lys Leu Val
 65 70 75 80

Glu Glu Cys Trp Asn Glu Leu Thr Thr Asp Cys Lys Arg Phe Leu
 85 90 95

Glu Glu Ala Glu Cys Phe Lys Lys Lys Asn Ile Cys Lys Tyr Phe Pro
 100 105 110

Asp Glu Val Lys Leu Lys Lys Lys
 115 120

<210> 36
 <211> 428
 <212> DNA
 <213> Lutzomyia longipalpis

<400> 36
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 cttaaggat tgcaatgaag caaaagccaa tcctggtgaa tacgagaatc tcaccaaaga 180
 agaaatgtt gaagaattga aagaatatgg agttgctgac acagacatgg agacagtta 240
 caaacttgtg gaagaatgtt ggaatgaatt aacaacaacg gattgtaaga gatttctcga 300

agaggctgaa tgcttcaaga agaagaatat ttgtaaatat ttcccgatg aagtgaaatt 360
 gaagaagaaa taaattttta gcttgaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 420
 aaaaaaaaaa 428

<210> 37
 <211> 572
 <212> PRT
 <213> Lutzomyia longipalpis
 <400> 37

Met Leu Phe Phe Leu Asn Phe Phe Val Leu Val Phe Ser Ile Glu Leu
 1 5 10 15

Ala Leu Leu Thr Ala Ser Ala Ala Glu Asp Gly Ser Tyr Glu Ile
 20 25 30

Ile Ile Leu His Thr Asn Asp Met His Ala Arg Phe Asp Gln Thr Asn
 35 40 45

Ala Gly Ser Asn Lys Cys Gln Glu Lys Asp Lys Ile Ala Ser Lys Cys
 50 55 60

Tyr Gly Gly Phe Ala Arg Val Ser Thr Met Val Lys Lys Phe Arg Glu
 65 70 75 80

Glu Asn Gly Ser Ser Val Leu Phe Leu Asn Ala Gly Asp Thr Tyr Thr
 85 90 95

Gly Thr Pro Trp Phe Thr Leu Tyr Lys Glu Thr Ile Ala Thr Glu Met
 100 105 110

Met Asn Ile Leu Arg Pro Asp Ala Ala Ser Leu Gly Asn His Glu Phe
 115 120 125

Asp Lys Gly Val Glu Gly Leu Val Pro Phe Leu Asn Gly Val Thr Phe
 130 135 140

Pro Ile Leu Thr Ala Asn Leu Asp Thr Ser Gln Glu Pro Thr Met Thr
 145 150 155 160

Asn Ala Lys Asn Leu Lys Arg Ser Met Ile Phe Thr Val Ser Gly His
 165 170 175

Arg Val Gly Val Ile Gly Tyr Leu Thr Pro Asp Thr Lys Phe Leu Ser
 180 185 190

Asp Val Gly Lys Val Asn Phe Ile Pro Glu Val Glu Ala Ile Asn Thr
195 200 205

Glu Ala Gln Arg Leu Lys Lys Glu Glu Asn Ala Glu Ile Ile Ile Val
210 215 220

Val Gly His Ser Gly Leu Ile Lys Asp Arg Glu Ile Ala Glu Lys Cys
225 230 235 240

Pro Leu Val Asp Ile Ile Val Gly Gly His Ser His Thr Phe Leu Tyr
245 250 255

Thr Gly Ser Gln Pro Asp Arg Glu Val Pro Val Asp Val Tyr Pro Val
260 265 270

Val Val Thr Gln Ser Ser Gly Lys Lys Val Pro Ile Val Gln Ala Tyr
275 280 285

Cys Phe Thr Lys Tyr Leu Gly Tyr Phe Lys Val Thr Ile Asn Gly Lys
290 295 300

Gly Asn Val Val Gly Trp Thr Gly Gln Pro Ile Leu Leu Asn Asn Asn
305 310 315 320

Ile Pro Gln Asp Gln Glu Val Leu Thr Ala Leu Glu Lys Tyr Arg Glu
325 330 335

Arg Val Glu Asn Tyr Gly Asn Arg Val Ile Gly Val Ser Arg Val Ile
340 345 350

Leu Asn Gly Gly His Thr Glu Cys Arg Phe His Glu Cys Asn Met Gly
355 360 365

Asn Leu Ile Thr Asp Ala Phe Val Tyr Ala Asn Val Ile Ser Thr Pro
370 375 380

Met Ser Thr Asn Ala Trp Thr Asp Ala Ser Val Val Leu Tyr Gln Ser
385 390 395 400

Gly Gly Ile Arg Ala Pro Ile Asp Pro Arg Thr Ala Ala Gly Ser Ile
405 410 415

Thr Arg Leu Glu Leu Asp Asn Val Leu Pro Phe Gly Asn Ala Leu Tyr
420 425 430

Val Val Lys Val Pro Gly Asn Val Leu Arg Lys Ala Leu Glu His Ser
435 440 445

Val His Arg Tyr Ser Asn Thr Ser Gly Trp Gly Glu Phe Pro Gln Val
450 455 460

Ser Gly Leu Lys Ile Arg Phe Asn Val Asn Glu Glu Ile Gly Lys Arg

Val Lys Ser Val Lys Val Leu Cys Ser Asn Cys Ser Gln Pro Glu Tyr
485 490 495

Gln Pro Leu Arg Asn Lys Lys Thr Tyr Asn Val Ile Met Asp Ser Phe
 500 505 510

Met Lys Asp Gly Gly Asp Gly Tyr Ser Met Phe Lys Pro Leu Lys Ile
515 520 525

Ile Lys Thr Leu Pro Leu Gly Asp Ile Glu Thr Val Glu Ala Tyr Ile
530 535 540

Glu Lys Met Gly Pro Ile Phe Pro Ala Val Glu Gly Arg Ile Thr Val
545 550 555 560

Leu Gly Gly Leu Gln Lys Ser Asp Glu Asp Trp His
565 570

<210> 38
<211> 1839
<212> DNA
<213> *Lutzomyia longipalpis*

<400> 38
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agatcataat tcttcacacc aatgatatgc acgcgcgtt tgatcaaacc aatgctggaa 180
gcaacaaatg ccaagaaaaa gacaagattt cttccaaatg ctacggagga tttgcaagag 240
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ctggtgacac gtatacaggt accccatggt ttaccctcta caaggagacc attgcaacgg 360
agatgatgaa catccttcgt ccagatgcag cctcaactggg aaatcatgaa ttgcacaaag 420
gagtagaagg actcgtgcca ttcctcaatg gtgtcacctt ccctatTTT acagcgaatt 480
tggacacttc tcaagagcca acaatgacca atgctaaaaa tctcaaacgc tcaatgattt 540
ttacggtttc cgggcacaga gttgggtgtaa ttggctacct aacgcctgat acaaaaattcc 600

tctcggacgt	tggtaaagtt	aattttattc	cggaaaggta	agccatcaat	acggaagcac	660	
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taaaagatcg	agaaattgca	gagaaatgcc	cactggttga	cataattgtt	ggaggacatt	780	
cacacacatt	cctctacaca	ggaagtca	ctgatcg	ggttcctgt	gacgtttatc	840	
ctgttgttgc	gaccatcc	agtggaaaga	aagttccaat	tgttcaagcc	tattgcttta	900	
caaagtattt	gggtacttt	aaagtgacga	tcaacggaaa	aggaaatgtt	gtgggatgga	960	
ctgggcagcc	aatttcctt	aataacaaca	ttccccaa	tcaggaagtt	ctcactgctc	1020	
ttgaaaagta	cagagaacgc	gtggaaaact	atggaaatcg	cgtaatttgg	gtttcccgt	1080	
taattctcaa	tggggggcat	actgaatgtc	gttccatga	atgcaatatg	ggttatctca	1140	
tcacggacgc	ttttgtgtat	gccaatgtaa	tcagtacacc	aatgagtacg	aatgccttgg	1200	
cagatgcaag	tgttgttctg	tatcaaagt	gtggcattcg	tgc	cccaatt gatcctcgta	1260	
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gatactccaa	cacttcggga	tggggagaat	ttccacaagt	ttcggggcta	aagattcg	1440	
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gctctcaacc	tgaataccaa	ccactgagaa	ataaaaaaaac	ttacaacgtt	atcatggaca	1560	
tttttatgaa	ggatggaggt	gatgggtata	gcatgttcaa	gcccttgaag	atcatcaaga	1620	
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tcccagcagt	cgagggagg	atcactgttc	ttggggact	tcaaaaatca	gatgaggatt	1740	
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aaaaaaaaat	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa		1839	

<210> 39
<211> 86
<212> PRT
<213> Lutzomyia longipalpis

<400> 39

Met Lys Gln Ile Leu Leu Ile Ser Leu Val Val Ile Leu Ala Val Leu
1 5 10 15

Ala Phe Asn Val Ala Glu Gly Cys Asp Ala Thr Cys Gln Phe Arg Lys
20 25 30

Ala Ile Glu Asp Cys Lys Lys Ala Asp Asn Ser Asp Val Leu Gln
35 40 45

Thr Ser Val Gln Thr Thr Ala Thr Phe Thr Ser Met Asp Thr Ser Gln
50 55 60

Leu Pro Gly Asn Asn Val Phe Lys Ala Cys Met Lys Glu Lys Ala Lys
65 70 75 80

Glu Phe Arg Ala Gly Lys
85

<210> 40
<211> 419
<212> DNA
<213> *Lutzomyia longipalpis*

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<400> 40
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agccatagaa gactgcaaga agaaggcgga taatagcgat gtttgcaga cttctgtaca 180
aacaactgca acattcacat caatggatac atcccaacta cctggaaata atgtcttcaa 240
agcatgcatg aaggagaagg ctaaggaatt tagggcagga aagtaagaga ttgagggaaa 300
ttgttagccga agagagaagg aaggaaagtc ccataatttg tttgttaatt gtaacgaatt 360
ttgcgaaaaaa aataaaatat tatgcactcc aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 419
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<210> 41
<211> 84
<212> PRT
<213> *Lutzomyia longipalpis*

<400> 41

Met Asn Val Leu Phe Val Ser Phe Thr Leu Thr Ile Leu Leu Leu Cys
1 5 10 15

Val Lys Ala Arg Pro Glu Asp Phe Val Ala Leu Gln Asp Gln Ala Asn
20 25 30

Phe Gln Lys Cys Leu Glu Gln Tyr Pro Glu Pro Asn Gln Ser Gly Glu
 35 40 45

Val Leu Ala Cys Leu Lys Lys Arg Glu Gly Ala Lys Asp Phe Arg Glu
50 55 60

Lys Arg Ser Leu Asp Asp Ile Glu Gly Thr Phe Gln Glu Ser Gly Asn
65 70 75 80

Leu Trp Gly Ala

<210> 42
<211> 429
<212> DNA
<213> Lutzomyia longipalpis

<400> 42
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tccagaaaatg cctcgaacaa tatccagaac caaatcaatc tggagaagtt cttgcgtgcc 180
tcaagaagcg cgaaggtgcc aaagatttcc gggaaaagag gagcctggat gacatagaag 240
ggactttcca agagtctgga aatctctggg gtgcataggag agctcagagg acttctaatc 300
aatctgtgag aagagaaccc aacggctaga gaaaatttaa ggaaaataaa gaaattaatg 360
aagcattaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 420
aaaaaaaaaa 429

<210> 43
<211> 626
<212> PRT
<213> Lutzomyia longipalpis

<400> 43

Met	Lys	Ile	Thr	Val	Ile	Leu	Phe	Thr	Gly	Phe	Thr	Ile	Ala	Leu	Val
1				5				10				15			

Ser	Ser	Ala	Val	Leu	Lys	Lys	Asn	Gly	Glu	Thr	Ile	Glu	Glu	Glu
							20		25			30		

Val	Arg	Ala	Glu	Gln	Arg	Leu	Arg	Glu	Ile	Asn	Glu	Glu	Leu	Asp	Arg
							35		40			45			

Arg	Lys	Asn	Ile	Asn	Thr	Val	Ala	Ala	Trp	Ala	Tyr	Ala	Ser	Asn	Ile
						50		55			60				

Thr	Glu	Val	Asn	Leu	Lys	Asn	Met	Asn	Asp	Val	Ser	Val	Glu	Thr	Ala
						65		70			75		80		

Lys	Tyr	Tyr	Lys	Glu	Leu	Ala	Ser	Glu	Leu	Lys	Gly	Phe	Asn	Ala	Lys
							85		90			95			

Glu	Tyr	Lys	Ser	Glu	Asp	Leu	Lys	Arg	Gln	Ile	Lys	Lys	Leu	Ser	Lys
						100		105				110			

Leu Gly Tyr Ser Ala Leu Pro Ser Glu Lys Tyr Lys Glu Leu Leu Glu
115 120 125

Ala Ile Thr Trp Met Glu Ser Asn Tyr Ala Lys Val Lys Val Cys Ser
130 135 140

Tyr Lys Asp Pro Lys Lys Cys Asp Leu Ala Leu Glu Pro Glu Ile Thr
145 150 155 160

Glu Ile Leu Ile Lys Ser Arg Asp Pro Glu Glu Leu Lys Tyr Tyr Trp
165 170 175

Lys Gln Trp Tyr Asp Lys Ala Gly Thr Pro Thr Arg Glu Ser Phe Asn
180 185 190

Lys Tyr Val Gln Leu Asn Arg Glu Ala Ala Lys Leu Asp Gly Phe Tyr
195 200 205

Ser Gly Ala Glu Ser Trp Leu Asp Glu Tyr Glu Asp Glu Thr Phe Glu
210 215 220

Lys Gln Leu Glu Asp Ile Phe Ala Gln Ile Arg Pro Leu Tyr Glu Gln
225 230 235 240

Leu His Ala Tyr Val Arg Phe Lys Leu Arg Glu Lys Tyr Gly Asn Asp
245 250 255

Val Val Ser Glu Lys Gly Pro Ile Pro Met His Leu Leu Gly Asn Met
260 265 270

Trp Gly Gln Thr Trp Ser Glu Val Ala Pro Ile Leu Val Pro Tyr Pro
275 280 285

Glu Lys Lys Leu Leu Asp Val Thr Asp Glu Met Val Lys Gln Gly Tyr
290 295 300

Thr Pro Ile Ser Met Phe Glu Lys Gly Asp Glu Phe Phe Gln Ser Leu
305 310 315 320

Asn Met Thr Lys Leu Pro Lys Thr Phe Trp Glu Tyr Ser Ile Leu Glu
325 330 335

Lys Pro Gln Asp Gly Arg Glu Leu Ile Cys His Ala Ser Ala Trp Asp
340 345 350

Phe Tyr Thr Lys Asp Asp Val Arg Lys Gln Cys Thr Arg Val Thr Met
355 360 365

Asp Gln Phe Phe Thr Ala His His Glu Leu Gly His Ile Gln Tyr Tyr
370 375 380

Leu Gln Tyr Gln His Leu Pro Ser Val Tyr Arg Glu Gly Ala Asn Pro
385 390 395 400

Gly Phe His Glu Ala Val Gly Asp Val Leu Ser Leu Ser Val Ser Ser
405 410 415

Pro Lys His Leu Glu Lys Val Gly Leu Leu Lys Asp Phe Lys Phe Asp
420 425 430

Glu Glu Ser Gln Ile Asn Gln Leu Leu Asn Leu Ala Leu Asp Lys Met
435 440 445

Ala Phe Leu Pro Phe Ala Tyr Thr Ile Asp Lys Tyr Arg Trp Gly Val
450 455 460

Phe Arg Gly Glu Ile Ser Pro Ser Glu Tyr Asn Cys Lys Phe Trp Glu
465 470 475 480

Met Arg Ser Tyr Tyr Gly Ile Glu Pro Pro Ile Ala Arg Ser Glu
485 490 495

Ser Asp Phe Asp Pro Pro Ala Lys Tyr His Ile Ser Ser Asp Val Glu
500 505 510

Tyr Leu Arg Tyr Leu Val Ser Phe Ile Ile Gln Phe Gln Phe His Gln
515 520 525

Ala Val Cys Gln Lys Thr Gly Gln Phe Val Pro Asn Asp Pro Glu Lys
530 535 540

Thr Leu Leu Asn Cys Asp Ile Tyr Gln Ser Ala Glu Ala Gly Asn Ala
545 550 555 560

Phe Lys Glu Met Leu Lys Leu Gly Ser Ser Lys Pro Trp Pro Asp Ala
565 570 575

Met Glu Ile Leu Thr Gly Gln Arg Lys Met Asp Ala Ser Ala Leu Ile
580 585 590

Glu Tyr Phe Arg Pro Leu Ser Glu Trp Leu Gln Lys Lys Asn Lys Glu
 595 600 605

Leu Gly Ala Tyr Val Gly Trp Asp Lys Ser Thr Lys Cys Val Lys Asn
 610 615 620

Val Ser
 625

<210> 44
<211> 2121
<212> DNA
<213> *Iutzomyia longipalpis*

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gcaacgactt agagagatca atgaggaact tgatcgtagg aagaatatca atactgttagc	240
cgcgtggct tatgcatacca atattactga ggtcaatctc aagaacatga atgatgtgtc	300
ggttgaaacc gcgaaatact acaaggaact tgcatactgaa ttgaaggat tcaatgccaa	360
ggaataacaag agtgaggatc tgaagagaca aattaagaag ctaagcaagt tggatatacg	420
tgcatttacca tctgagaagt ataaggagct tttggaagct atcacatgga tggatcgaa	480
ttatgcacaaa gtgaaagttt gctcatacaa ggatccaaag aaatgtgatt tagcacttga	540
acctgaaatt acggaaatcc ttattaaaag tcgagatcct gaggaactta aatattattg	600
gaaacaatgg tacgacaaag ctggcacacc aactcgagag agtttaata agtatgtaca	660
actaaatcgt gaagcagcga aattggatgg attttattcg ggtgcagaat cttggcttga	720
tgaatatgaa gatgagacat ttgagaaaca acttgaggat atcttcgccc aaattcgccc	780
actgtacgag caactccatg cttatgttag attcaagctg agggaaaagt atggaaatga	840
cgttgtttcg gagaaaggc ccattccaat gcatctttg gggacatgt ggggtcaaac	900
gtggagtgaa gttcccccaa ttttagtccc ataccccgaa aagaagctcc tcgatgttac	960
cgtatgatg gttaaagcagg gatacacacc aatttctatg tttgaaaaag gagacgaatt	1020
tttccaaagc ttgaatatga cgaaacttcc aaaaaccttc tgggagtgaca gtatgttgc	1080
aaaaccccaa gatggtaggg aattgatctg ccatgcaagt gcatggact tctataacaa	1140
ggatgatgta aggattaaac agtgtaccag agttacaatg gatcaattct tcacggctca	1200
tcatgagctt ggtcacattc aatattattt gcaatatcaa catttgcgaa gtgtttacag	1260
agaaggtgcc aatccaggct ttcacgaggc tggggat gttctcttc ttccgtatc	1320

aagtccctaaa cattggaaa aagttggttt gcttaaagac ttcaaatttgc atgaagaatc	1380
ccagataaat caacttctaa attagctct ggataaaatg gcattcctcc catttgccta	1440
taccattgtat aaatatcgct ggggtgtgtt tcggggtgaa atttcgccgt ctgagtacaa	1500
ttgcaaattt tggaaatgc gttcctacta tgggtgtata gaaccaccaa ttgcacgttc	1560
tgagagtgtat ttgtatccac cagaaaata tcataattca tcggatgttg agtacctcag	1620
gtatttggtt tccttcatta ttcagttcca attccatcaa gctgtgtgcc aaaagactgg	1680
tcagttcgta ccgaatgatc cgaggaaagac tcttctaaat tgtgacatct accagagtgc	1740
tgaggctggt aatgccttca aagaaatgct caaattggaa tcctcaaaac catggccaga	1800
tgcaatggaa attcttacgg ggcaaaggaa aatggatgct tctgcattaa ttgagtactt	1860
ccgtccactc agttagtggt tgcagaagaa gaataaggaa ctaggagctt atgttggctg	1920
ggacaaaatct actaagtgtg tcaaaaacgt cagttattt tttgtgagcc ctaaaaaata	1980
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aaaaaaaaaaaa aaaaaaaaaa a	2121

<210> 45

<211> 42

<212> PRT

<213> Lutzomyia longipalpis

<400> 45

Met Lys Thr Phe Ala Leu Ile Phe Leu Ala Leu Ala Val Phe Val Leu			
1	5	10	15

Cys Ile Asp Gly Ala Pro Thr Phe Val Asn Leu Leu Asp Asp Val Gln			
20	25	30	

Glu Glu Val Glu Val Asn Thr Tyr Glu Pro		
35	40	

<210> 46

<211> 463

<212> DNA

<213> Lutzomyia longipalpis

<400> 46

tcagtttgtt gactaacaaa ccacaataga gacactaaaa tgaagacatt cgccttaatc	60
ttcttggctc ttgctgtttt tgtgctctgc attgacggag ctccaaacctt tgtgaattta	120
ctggacgacg tacaggaaga ggtagaagtt aatacgtatg agccttagga agaaaatgtt	180
tgaggagttt cagggcagagg cagagcttcc ccagagaggg agctttgcc ttgctgtaga	240

tttttaaaaa tgaatcaatt tgattggagc aattacgcta tatttgtgg aatatttttg 300
 aattaaaaac taattatgga aattaatata taatttcag aatttcaata aattcatcaa 360
 aattgtatta attaaaaat attgtatgaa attcccaata aaagcttca attaaaaaa 420
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 463

<210> 47
 <211> 139
 <212> PRT
 <213> Lutzomyia longipalpis

<400> 47

Met Asn His Leu Cys Phe Ile Ile Ile Ala Leu Phe Phe Leu Val Gln
 1 5 10 15

Gln Ser Leu Ala Glu His Pro Glu Glu Lys Cys Ile Arg Glu Leu Ala
 20 25 30

Arg Thr Asp Glu Asn Cys Ile Leu His Cys Thr Tyr Ser Tyr Tyr Gly
 35 40 45

Phe Val Asp Lys Asn Phe Arg Ile Ala Lys Lys His Val Gln Lys Phe
 50 55 60

Lys Lys Ile Leu Val Thr Phe Gly Ala Val Pro Lys Lys Glu Lys Lys
 65 70 75 80

Lys Leu Leu Glu His Ile Glu Ala Cys Ala Asp Ser Ala Asn Ala Asp
 85 90 95

Gln Pro Gln Thr Lys Asp Glu Lys Cys Thr Lys Ile Asn Lys Tyr Tyr
 100 105 110

Arg Cys Val Val Asp Gly Lys Ile Leu Pro Trp Asn Ser Tyr Ala Asp
 115 120 125

Ala Ile Ile Lys Phe Asp Lys Thr Leu Asn Val
 130 135

<210> 48
 <211> 579
 <212> DNA
 <213> Lutzomyia longipalpis

<400> 48
 ggccattatg gcccgggata gaacttaatt gttgttaaaa tgaatcactt gtgcatttatt 60

attattgctc tattttttt ggttcaacaa tctttggctg aacatccaga agaaaaatgt	120
attagagaat tggcgagaac tgatgaaaac tgcattcttc attgtacgta ttctactac	180
ggattcggttg ataaaaattt caggatcgct aaaaaacatg ttcaaaaatt caaaaaaatc	240
ctagttacat tcggcgctgt tcctaagaaa gaaaaaaaaa aacttttaga gcacattgag	300
gcttgtgcgg attctgcgaa tgctgatcaa cctcaaaacta aagatgaaaa atgtacaaaa	360
ataaataagt actatcggtg tgttgtggat ggaaaaatata taccctggaa tagttatgct	420
gatgcaatca ttaagttga taaaaccctt aacgtatgaa gcaaagatat tcgaaaaaaaa	480
aacatcaaga ttatgctgaa aagaaaaaaaaaaa ttgtgctaataa caaattgaaat	540
taacgcttaa tgctatatta aaaaaaaaaaaa aaaaaaaaaaaa	579

<210> 49
<211> 446
<212> PRT
<213> Lutzomyia longipalpis

<400> 49

Met Lys Ile Ile Phe Leu Ala Ala Phe Leu Leu Ala Asp Gly Ile Trp			
1	5	10	15

Ala Ala Glu Glu Pro Ser Val Glu Ile Val Thr Pro Gln Ser Val Arg		
20	25	30

Arg His Ala Thr Pro Lys Ala Gln Asp Ala Arg Val Gly Ser Glu Ser		
35	40	45

Ala Thr Thr Ala Pro Arg Pro Ser Glu Ser Met Asp Tyr Trp Glu Asn		
50	55	60

Asp Asp Phe Val Pro Phe Glu Gly Pro Phe Lys Asp Ile Gly Glu Phe			
65	70	75	80

Asp Trp Asn Leu Ser Lys Ile Val Phe Glu Glu Asn Lys Gly Asn Ala		
85	90	95

Ile Leu Ser Pro Leu Ser Val Lys Leu Leu Met Ser Leu Leu Phe Glu		
100	105	110

Ala Ser Ala Ser Gly Thr Leu Thr Gln His Gln Leu Arg Gln Ala Thr		
115	120	125

Pro Thr Ile Val Thr His Tyr Gln Ser Arg Glu Phe Tyr Lys Asn Ile		
130	135	140

Phe Asp Gly Leu Lys Lys Lys Ser Asn Asp Tyr Thr Val His Phe Gly
145 150 155 160

Thr Arg Ile Tyr Val Asp Gln Phe Val Thr Pro Arg Gln Arg Tyr Ala
165 170 175

Ala Ile Leu Glu Lys His Tyr Leu Thr Asp Leu Lys Val Glu Asp Phe
180 185 190

Ser Lys Ala Lys Glu Thr Thr Gln Ala Ile Asn Ser Trp Val Ser Asn
195 200 205

Ile Thr Asn Glu His Ile Lys Asp Leu Val Lys Glu Glu Asp Val Gln
210 215 220

Asn Ser Val Met Leu Met Leu Asn Ala Val Tyr Phe Arg Gly Leu Trp
225 230 235 240

Arg Lys Pro Phe Asn Arg Thr Leu Pro Leu Pro Phe His Val Ser Ala
245 250 255

Asp Glu Ser Lys Thr Thr Asp Phe Met Leu Thr Asp Gly Leu Tyr Tyr
260 265 270

Phe Tyr Glu Ala Lys Glu Leu Asp Ala Lys Ile Leu Arg Ile Pro Tyr
275 280 285

Lys Gly Lys Gln Tyr Ala Met Thr Val Ile Leu Pro Asn Ser Lys Ser
290 295 300

Gly Ile Asp Ser Phe Val Arg Gln Ile Asn Thr Val Leu Leu His Arg
305 310 315 320

Ile Lys Trp Leu Met Asp Glu Val Glu Cys Arg Val Ile Leu Pro Lys
325 330 335

Phe His Phe Asp Met Thr Asn Glu Leu Lys Glu Ser Leu Val Lys Leu
340 345 350

Gly Ile Ser Gln Ile Phe Thr Ser Glu Ala Ser Leu Pro Ser Leu Ala
355 360 365

Arg Gly Gln Gly Val Gln Asn Arg Leu Gln Val Ser Asn Val Ile Gln
370 375 380

Lys Ala Gly Ile Ile Val Asp Glu Lys Gly Ser Thr Ala Tyr Ala Ala
 385 390 395 400

Ser Glu Val Ser Leu Val Asn Lys Phe Gly Asp Asp Glu Phe Val Met
 405 410 415

Phe Asn Ala Asn His Pro Phe Leu Phe Thr Ile Glu Asp Glu Thr Thr
 420 425 430

Gly Ala Ile Leu Phe Thr Gly Lys Val Val Asp Pro Thr Gln
 435 440 445

<210> 50
<211> 1651
<212> DNA
<213> Lutzomyia longipalpis

<220>
<221> misc_feature
<222> (1636)..(1636)
<223> n is a, c, g, or t

<400> 50
gtcggagatc gtctgcattt atgatcacat cgtgattgtg agttacaaga gtgaaaacttt 60
ttaagtgtgt gtgtcttagc aaagtgattt ccacaatgaa gattattttt ttagccgctt 120
ttctactagc ggatggattt tgggctgctg aagaaccttc agtggaaatt gtaacaccac 180
aatcagtgcg gagacacgct acgcacaaag cccaggacgc gagggtagga agtgaatccg 240
caacaacagc accaagacca agtgaatcaa tggattactg ggagaatgat gatttcgtcc 300
catttgaggg tccattcaag gatattggag aattcgactg gaaccttcg aagatcgttt 360
ttgaggaaaa caaaggtaat gccatcttgt cgccactctc tgtgaagcta ctaatgagtt 420
tgctcttoga ggccagtgcg tcaggtacct tgacccagca ccaactcaga caagccactc 480
ccaccatgt caccactat cagtctcgag aatttacaa gaatatctt gacggtctca 540
agaaaaagag taacgactac acggttcaact ttggtagcag aatctacgtg gatcagttt 600
tgacgcctcg ccagagatat gctgccattt tggagaagca ttatctgact gatctcaaag 660
ttgaggactt ctcgaaggca aaagaaacaa ctcaggcaat caatagttgg gtgtcaaaca 720
tcacaaatga gcacataaag gatctcgta aggaggaaga tgttcagaat tcagttatgc 780
tcatgcttaa tgcagtctac ttccgcggac tctggcgcaa gccttcaat cgtacactcc 840
caactgcccctt ccacgtgagc gctgatgagt ccaagacgac tgatTTATG ctaaccgatg 900
ggctctacta cttctacgag gcaaaggaat tggatgctaa gatcctcaga attccttaca 960
aaggtaaaca atacgcaatg actgtgatct taccaaattc caagagtggc attgatagct 1020

ttgtgcgtca gattaacacg gtcctcctgc acaggattaa gtggttgatg gatgaagtgg 1080
 agtgcaggg tattctaccc aagttccact ttgacatgac gaatgagctg aaggaatcgc 1140
 tcgtaaagt gggcatcagt cagatttca catcagaggc atcttgcca tcattagcac 1200
 gaggacaggg cgtacagaat cgtctgcagg tgtctaattgt gattcagaag gcgggataa 1260
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 ttggagatga tgagttcgtc atgttcaacg ctaatcatcc attcctctt acaattgagg 1380
 acgaaaccac cggcgcaatc ctattacgg gaaaagtcgt cgatcccacg caataggaa 1440
 taaaaagcat ttcatcgat acaacttttt ttttaattaa ttattcctca ttgaaggaca 1500
 ttaatagagc atcttctcag gaaggcactc ctgacttatt tttactaaat gtgatcctg 1560
 gacacataaa aaaaacagct gtactttcta cttttataa tatacgacca tatttgtgag 1620
 gaaaaaaaaa aaaaanaaaaa aaaaaaaaaa a 1651

<210> 51
 <211> 166
 <212> PRT
 <213> Lutzomyia longipalpis

<400> 51

Met Arg Phe Leu Leu Leu Ala Phe Ser Val Ala Leu Val Leu Ser Pro
 1 5 10 15

Thr Phe Ala Lys Pro Gly Leu Trp Asp Ile Val Thr Gly Ile Asn Asp
 20 25 30

Met Val Lys Asn Thr Ala Asn Ala Leu Lys Asn Arg Leu Thr Thr Ser
 35 40 45

Val Thr Leu Phe Thr Asn Thr Ile Thr Glu Ala Ile Lys Asn Ala Asn
 50 55 60

Ser Ser Val Ser Glu Leu Leu Gln Gln Val Asn Glu Thr Leu Thr Asp
 65 70 75 80

Ile Ile Asn Gly Val Gly Gln Val Gln Ser Ala Phe Val Asn Ser Ala
 85 90 95

Gly Asn Val Val Val Gln Ile Val Asp Ala Ala Gly Asn Val Leu Glu
 100 105 110

Val Val Val Asp Glu Ala Gly Asn Ile Val Glu Val Ala Gly Thr Ala
 115 120 125

Leu Glu Thr Ile Ile Pro Leu Pro Gly Val Val Ile Gln Lys Ile Ile
 130 135 140

Asp Ala Leu Gln Gly Asn Ala Gly Thr Thr Ser Asp Ser Ala Ser Ser
 145 150 155 160

Thr Val Pro Gln Gln Ser
 165

<210> 52
<211> 739
<212> DNA
<213> *Lutzomyia longipalpis*

<400> 52
tcagtttaagc agattttcaa gctaaagaaa cttaactaag atgcgattcc ttcttttggc 60
cttctccgtt gcttgggtgc tttcaccaac attcgccaaa ccaggtcttt gggacattgt 120
aactggtatt aatgatatgg taaaaaaatac tgcaaatgca ctcaaaaatc gtctaacaac 180
ttctgtgaca ttattcacaa ataccatcac cgaagctata aaaaatgcaa attcttctgt 240
ttcggaaactc cttcagcaag tcaatgaaac ccttacggat attattaatg gtgttaggaca 300
agtgcagagt gcctttgtga attcagctgg aaatgttggt gtgcaaattg ttgatgccgc 360
tggaaatgtt ttggaagttg ttgttgatga ggctggaaat atcgtggagg tagctggaac 420
agcattggaa actatcattc cactgccccg tgttagtgatt cagaagataa ttgatgctct 480
ccaaggaaat gcagggacta catcgattc agcttcatca actgtgcccc aacaatctta 540
actacaaccg caatgatgtt gtctttaacg gagaattttt aaatttgaat atcaaaaatcc 600
aagatgaaat attcagattt ttcaatcaat atgatacgaa attttgaat tatttttccg 660
actaaagcaa tttgtaaaag gaaaacccaaa taaatatttg aaattgtaaa gaaaaaaaaaa 720
aaaaaaaaaaaa aaaaaaaaaaa 739

<210> 53
<211> 109
<212> PRT
<213> *Lutzomyia longipalpis*

<400> 53

Met Val Lys Tyr Ser Cys Leu Val Leu Val Ala Ile Phe Leu Leu Ala
 1 5 10 15

Gly Pro Tyr Gly Val Val Gly Ser Cys Glu Asn Asp Leu Thr Glu Ala
 20 25 30

Ala Lys Tyr Leu Gln Asp Glu Cys Asn Ala Gly Glu Ile Ala Asp Glu
 35 40 45

Phe Leu Pro Phe Ser Glu Glu Glu Val Gly Glu Ala Leu Ser Asp Lys
 50 55 60

Pro Glu Asn Val Gln Glu Val Thr Asn Ile Val Arg Gly Cys Phe Glu
 65 70 75 80

Ala Glu Gln Ala Lys Glu His Gly Lys Cys Glu Arg Phe Ser Ala Leu
 85 90 95

Ser Gln Cys Tyr Ile Glu Lys Asn Leu Cys Gln Phe Phe
 100 105

<210> 54
<211> 447
<212> DNA
<213> *Lutzomyia longipalpis*

<400> 54
atatacaattt tatcatcatg gtgaagtact cgtgtcttgc tcttggttgc atttttcttc 60
tggccggacc ctacggcggtt gtagggttctt gtgagaatga cctgacagag gccgccaagt 120
atcttcaaga tgaatgcaat gcaggtgaaa ttgcagatga atttctaccc ttctctgaag 180
aagaagtggg tgaagcattt agcgacaaaac cagaaaacgt gcaggaagtc accaacatcg 240
tgagaggatg ctttgaagct gaacaagcca aagagcatgg aaaatgtgaa agatttccg 300
ctttgagtca atgctacatt gaaaagaatt tatgtcaatt cttctaaaat attttgaaga 360
aaagttatga atgaaaattt tctgaaattt tggtgaaaa atatataaat tgcccaatta 420
aaaaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 447

<210> 55
<211> 115
<212> PRT
<213> *Lutzomyia longipalpis*

<400> 55

Met Lys Phe Phe Tyr Leu Ile Phe Ser Ala Ile Phe Phe Leu Ala Asp
 1 5 10 15

Pro Ala Leu Val Lys Cys Ser Glu Asp Cys Glu Asn Ile Phe His Asp
 20 25 30

Asn Ala Tyr Leu Leu Lys Leu Asp Cys Glu Ala Gly Arg Val Asp Pro
 35 40 45

Val Glu Tyr Asp Asp Ile Ser Asp Glu Glu Ile Tyr Glu Ile Thr Val
 . 50 55 60

Asp Val Gly Val Ser Ser Glu Asp Gln Glu Lys Val Ala Lys Ile Ile
 65 70 75 80

Arg Glu Cys Ile Ala Gln Val Ser Thr Gln Asp Cys Thr Lys Phe Ser
 85 90 95

Glu Ile Tyr Asp Cys Tyr Met Lys Lys Ile Cys Asn Tyr Tyr Pro
 100 105 110

Glu Asn Met
 115

<210> 56
<211> 496
<212> DNA
<213> Lutzomyia longipalpis

<400> 56
agtttaattt tcatcatgaa gttcttctac ttgattttct ctgcaatttt ctttctggct 60
gatcctgctt tggcaagtgc ttcagaggat tgtgagaata tttttcatga caatgcgtac 120
ctccttaaat tggattgtga agcaggaagg gttgatcctg ttgaatacga cgatatttcg 180
gatgaagaaa tatatgaaat aacggtcgat gttggagttt catctgagga ccaggagaaa 240
gttgcgaaaa taataaggaa gtgcattgca caagttcaa cgcaagattt cacgaaattt 300
tcagaaatatt atgattgtta catgaagaag aaaatctgta attattatcc tgaaaatatg 360
taaaaaaaaaa ttatttattt atataaaaaaa atataaggat taaaatctct tattgattgt 420
aaaaatggcc taatattgaa gcaaaaatta aagcatgaaa caagacccaaa aaaaaaaaaaa 480
aaaaaaaaaaa aaaaaaa 496

<210> 57
<211> 409
<212> PRT
<213> Lutzomyia longipalpis

<400> 57

Met His Leu Gln Leu Asn Leu Cys Ala Ile Leu Leu Ser Val Leu Asn
 1 5 10 15

Gly Ile Gln Gly Ala Pro Lys Ser Ile Asn Ser Lys Ser Cys Ala Ile
 20 25 30

Ser Phe Pro Glu Asn Val Thr Ala Lys Lys Glu Pro Val Tyr Leu Lys
 35 40 45

Pro Ser Asn Asp Gly Ser Leu Ser Thr Pro Leu Gln Pro Ser Gly Pro
 50 55 60

Phe Val Ser Leu Lys Ile Gly Glu Ser Leu Ala Ile Phe Cys Pro Gly
 65 70 75 80

Asp Gly Lys Asp Val Glu Thr Ile Thr Cys Asn Thr Asn Phe Asp Leu
 85 90 95

Ala Ser Tyr Ser Cys Asn Lys Ser Thr Ser Thr Asp Thr Ile Glu Thr
 100 105 110

Glu Glu Val Cys Gly Gly Ser Gly Lys Val Tyr Lys Val Gly Phe Pro
 115 120 125

Leu Pro Ser Gly Asn Phe His Ser Ile Tyr Gln Thr Cys Phe Asp Lys
 130 135 140

Lys Asn Leu Thr Pro Leu Tyr Ser Ile His Ile Leu Asn Gly Gln Ala
 145 150 155 160

Val Gly Tyr His Leu Lys His Thr Arg Gly Ser Phe Arg Thr Asn Gly
 165 170 175

180 185 190

Lys Phe Asn Lys Leu Phe Gly Pro Lys Gln Thr Phe Phe Arg Arg Pro
 195 200 205

Leu Asn Phe Leu Ser Arg Gly His Leu Ser Pro Glu Val Asp Phe Thr
 210 215 220

Phe Arg Arg Glu Gln His Ala Thr Glu Met Tyr Ile Asn Thr Ala Pro
 225 230 235 240

Gln Tyr Gln Ser Ile Asn Gln Gly Asn Trp Leu Arg Val Glu Asn His
 245 250 255

Val Arg Asp Leu Ala Lys Val Leu Gln Lys Asp Ile Thr Val Val Thr
 260 265 270

Gly Ile Leu Gly Ile Leu Arg Leu Lys Ser Lys Lys Ile Glu Lys Glu

275

280

285

Ile Tyr Leu Gly Asp Asp Val Ile Ala Val Pro Ala Met Phe Trp Lys
 290 295 300

Ala Val Phe Asp Pro Gln Lys Gln Glu Ala Ile Val Phe Val Ser Ser
 305 310 315 320

Asn Asn Pro His Val Lys Thr Phe Asn Pro Asn Cys Lys Asp Val Cys
 325 330 335

Ala Gln Ala Gly Phe Gly Asn Asp Asn Leu Glu Tyr Phe Ser Asn Tyr
 340 345 350

Ser Ile Gly Leu Thr Ile Cys Cys Lys Leu Glu Glu Phe Val Lys Arg
 355 360 365

Asn Lys Ile Ile Leu Pro Lys Glu Val Asn Asn Lys Asn Tyr Thr Lys
 370 375 380

Lys Leu Leu Lys Phe Pro Lys Thr Arg Asn Lys Glu Gly Asp Lys Lys
 385 390 395 400

Val Val Arg Lys Arg Ala Lys Gly Ala
 405

<210> 58
<211> 1281
<212> DNA
<213> Lutzomyia longipalpis

<400> 58	
tcaatctaac aatgcacctg caattgaatt tggcgctat ttcctttcg gtactaaatg	60
gaattcaggg cgctccaaa agtattaatt caaatcctg cgcaatctcc ttccggaga	120
atgtaacggc taagaaggag ccagtgtact tgaaaccatc aaatgatggc tcattgagta	180
ccccctaca gccaagtggg ccatttgtaa gtctaaaaat tggagaatct cttgcaatct	240
tctgtccagg tggatggaaag gacgttagaga caattacgtg caatacaaattt ttcgat	300
ttccatattc gtgcaacaag agcacatcaa cggataccat tgaaacggaa gaagtggcg	360
gaggaagtgg aaaagtgtac aaagttggtt ttccgctgcc ctctggaaat ttccattcaa	420
tctaccaaacc gtgtttgtat aagaaaaatc tcacacctct ctactcaatt cacattctca	480
atggtcaagc tggatggatcaccttaagc acacaagagg aagcttcgt accaatggta	540
tctacggaa agtcaacatt gataaactct acaagacgca aattgagaaa ttcaacaaac	600

ttttcggccc taaacaaaaca	ttttccgta gaccctcaa	ttttctatca cgtggacact	660
taagccccga agtggacttt acattccgta	gggaacaaca tgcaacggaa	atgtacatta	720
acacagcacc acagtaccaa tcaattaatc	aaggaaattg gctacgtgtt	gaaaatcacg	780
tgagggatct cgcaaaagtt ctgcagaagg	acataacagt cgttacggga	attttgggga	840
tacttcgggtt gaagagtaag	aaaatagaga aagaaatcta	tttaggagat gacgtaattg	900
ccgttaccagg aatgttctgg aaggctgtt	ttgaccctca aaaacaagaa	gcaattgtct	960
ttgtttcctc aaataatccc cacgtgaaga	cctttaatcc caactgcaag	gatgtatgct	1020
ctcaagctgg atttggaat gataatctt	aatatttctc caattattct	attggctctga	1080
ctatttgttg caaacttgag	gaatttgtta aaagaaataa	aataattcta cccaaagaag	1140
taaataacaa aaactacacc	aaaaaactcc ttaagttcc	taaaacaaga aacaaggagg	1200
gagataagaa ggtggtacgt aagcgccca	aaggagcata aatattaaac	gaaaaaaaaa	1260
aaaaaaaaaaa aaaaaaaaaa	a		1281

<210> 59

<211> 160

<212> PRT

<213> Lutzomyia longipalpis

<400> 59

Met Asn Leu His Leu Ala Ile Ile Leu Phe Val Ser Tyr Phe Thr Leu			
1	5	10	15

Ile Thr Ala Thr Asp Leu Ile Glu Lys Glu Leu Ser Asp Cys Lys Lys		
20	25	30

Ile Phe Ile Ser Lys Ala Glu Leu Thr Trp Phe Gln Ala Leu Asp Phe		
35	40	45

Cys Thr Glu Gln Asn Leu Thr Leu Leu Ser Ile Lys Ser Ala Arg Glu		
50	55	60

Asn Asp Glu Val Thr Lys Ala Val Arg Ala Glu Val His Leu Pro Asp			
65	70	75	80

Thr Lys Lys Ser His Ile Trp Leu Gly Gly Ile Arg Tyr Asp Gln Asp		
85	90	95

Lys Asp Phe Arg Trp Ile Ser Asp Gly Thr Thr Val Thr Lys Thr Val		
100	105	110

Tyr Ile Asn Trp Tyr Gln Gly Glu Pro Asn Gly Gly Arg Tyr Gln Lys

115

120

125

Glu Phe Cys Met Glu Leu Tyr Phe Lys Thr Pro Ala Gly Gln Trp Asn
 130 135 140

Asp Asp Ile Cys Thr Ala Lys His His Phe Ile Cys Gln Glu Lys Lys
145 150 155 160

<210> 60
<211> 671
<212> DNA
<213> *Lutzomyia longipalpis*

<210> 61
<211> 160
<212> PRT
<213> *Lutzomyia longipalpis*

<400> 61

Met Asn Leu Pro Leu Ala Ile Ile Leu Phe Val Ser Tyr Phe Thr Leu
1 5 10 15

Ile Thr Ala Ala Asp Leu Thr Glu Lys Glu Leu Ser Asp Gly Lys Lys
20 25 30

Ile Phe Ile Ser Lys Ala Glu Leu Ser Trp Phe Asp Ala Leu Asp Ala
35 40 45

Cys Thr Glu Lys Asp Leu Thr Leu Leu Thr Ile Lys Ser Ala Arg Glu
 50 55 60

Asn Glu Glu Val Thr Lys Ala Val Arg Ala Glu Val His Leu Pro Asp
65 70 75 80

Thr Lys Lys Ser His Ile Trp Leu Gly Gly Ile Arg Tyr Asp Gln Asp
85 90 95

Lys Asp Phe Arg Trp Ile Ser Asp Gly Thr Thr Val Thr Lys Thr Val
 100 105 110

Tyr Ile Asn Trp Tyr Gln Gly Glu Pro Asn Gly Gly Arg Tyr Gln Lys
 115 120 125

Glu Phe Cys Met Glu Leu Tyr Phe Lys Thr Pro Ala Gly Gln Trp Asn
 130 135 140

Asp Asp Ile Cys Thr Ala Lys His His Phe Ile Cys Gln Glu Lys Lys
145 150 155 160

<210> 62
<211> 672
<212> DNA
<213> *Lutzomyia longipalpis*

<400> 62
gttctacgat aaaattttct tttcaaactt ttctttaaa gaaaaatctt caaaaagtta 60
aatgaattt gccccttgcg attatcctct ttgtgagtt cttcacactg atcaactgctg 120
cgatatctaac tgaaaaggaa ctttctgatg gcaaaaagat cttcatctcc aaggctgagc 180
taagttggtt cgatgctctc gatgcctgta ccgaaaaaga ccttaactttg ctcacaatta 240
aatccggcccg ggaaaaatgag gaagtgacta aagcagttcg agctgagggtt catcttccag 300
acacaaaagaa gtctcacatt tggctcgag gtattcgta tgatcaagac aaggatttcc 360
gttggataag cgatggaaca actgttacga agacagtcta catcaattgg taccaaggag 420
aacccaaatgg tgggaggtac caaaaggaat tttgtatgga attgtacttt aaaactccag 480
ctggtaatg gaatgatgat atttgtacag caaagcatca ttttatatgt caggagaaaa 540
aataaaattga attgttcatg tgtctttggc ggtgcgaagg tataattcag gttgacgaca 600
taaatttgatt tttcttcat taagaaaata aaggcttgaa ttttagcaaaa aaaaaaaaaaa 660
aaaaaaaaaa aa 672

<210> 63
<211> 399

<212> PRT

<213> Lutzomyia longipalpis

<400> 63

Met Lys Val Phe Phe Ser Ile Phe Thr Leu Val Leu Phe Gln Gly Thr
1 5 10 15

Leu Gly Ala Asp Thr Gln Gly Tyr Lys Trp Lys Gln Leu Leu Tyr Asn
20 25 30

Asn Val Thr Pro Gly Ser Tyr Asn Pro Asp Asn Met Ile Ser Thr Ala
35 40 45

Phe Ala Tyr Asp Ala Glu Gly Glu Lys Leu Phe Leu Ala Val Pro Arg
50 55 60

Lys Leu Pro Arg Val Pro Tyr Thr Leu Ala Glu Val Asp Thr Lys Asn
65 70 75 80

Ser Leu Gly Val Lys Gly Lys His Ser Pro Leu Leu Asn Lys Phe Ser
85 90 95

Gly His Lys Thr Gly Lys Glu Leu Thr Ser Ile Tyr Gln Pro Val Ile
100 105 110

Asp Asp Cys Arg Arg Leu Trp Val Val Asp Ile Gly Ser Val Glu Tyr
115 120 125

Arg Ser Arg Gly Ala Lys Asp Tyr Pro Ser His Arg Pro Ala Ile Val
130 135 140

Ala Tyr Asp Leu Lys Gln Pro Asn Tyr Pro Glu Val Val Arg Tyr Tyr
145 150 155 160

Phe Pro Thr Arg Leu Val Glu Lys Pro Thr Tyr Phe Gly Gly Phe Ala
165 170 175

Val Asp Val Ala Asn Pro Lys Gly Asp Cys Ser Glu Thr Phe Val Tyr
180 185 190

Ile Thr Asn Phe Leu Arg Gly Ala Leu Phe Ile Tyr Asp His Lys Lys
195 200 205

Gln Asp Ser Trp Asn Val Thr His Pro Thr Phe Lys Ala Glu Arg Pro
210 215 220

Thr Lys Phe Asp Tyr Gly Gly Lys Glu Tyr Glu Phe Lys Ala Gly Ile
 225 230 235 240

Phe Gly Ile Thr Leu Gly Asp Arg Asp Ser Glu Gly Asn Arg Pro Ala
 245 250 255

Tyr Tyr Leu Ala Gly Ser Ala Ile Lys Val Tyr Ser Val Asn Thr Lys
 260 265 270

Glu Leu Lys Gln Lys Gly Gly Lys Leu Asn Pro Glu Leu Leu Gly Asn
 275 280 285

Arg Gly Lys Tyr Asn Asp Ala Ile Ala Leu Ala Tyr Asp Pro Lys Thr
 290 295 300

Lys Val Ile Phe Phe Ala Glu Ala Asn Thr Lys Gln Val Ser Cys Trp
 305 310 315 320

Asn Thr Gln Lys Met Pro Leu Arg Met Lys Asn Thr Asp Val Val Tyr
 325 330 335

Thr Ser Ser Arg Phe Val Phe Gly Thr Asp Ile Ser Val Asp Ser Lys
 340 345 350

Gly Gly Leu Trp Phe Met Ser Asn Gly Phe Pro Pro Ile Arg Lys Ser
 355 360 365

Glu Lys Phe Lys Tyr Asp Phe Pro Arg Tyr Arg Leu Met Arg Ile Met
 370 375 380

Asp Thr Gln Glu Ala Ile Ala Gly Thr Ala Cys Asp Met Asn Ala
 385 390 395

<210> 64
<211> 1429
<212> DNA
<213> Lutzomyia longipalpis

<400> 64		
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tacaccagga tcctacaatc cggataatat gatcagtacg gctttgcct acgatgctga	180	
gggtgaaaaaa ctcttcctag ctgtcccaag gaagttaccc agagttccgt atacattggc	240	
ggaagtggat acaaagaata gtcttggtgt taagggaaaa cattcaccgt tacttaacaa	300	
attcagtggg cacaaaactg ggaaggaact aacatcaatc tatcagccag ttattgatga	360	

ttgtcgtcgc	ctttgggtgg	ttgatattgg	ttccgtggaa	tatcgctcaa	gaggtgccaa	420
agactacccg	agtcatcgtc	ctgcaattgt	tgcgtacgac	ctaaagcaac	caaactaccc	480
cgaagttgtt	cgatactatt	tccccacaag	attagtggag	aagccaacat	atttcgggtgg	540
atttgcgtt	gatgttgcaa	acccaaaggg	ggattgttagt	gaaactttg	tctacattac	600
aaacttcctc	aggggagctc	tctttatata	cgatcataag	aagcaggatt	cgtggaatgt	660
aactcatccc	accttcaaag	cagaacgacc	cactaaattt	gattacggcg	gaaaggaata	720
tgaattcaa	gccggaattt	tcggaattac	tctcggagat	cgagacagtg	aaggcaatcg	780
tccagttac	tacttagccg	gaagtgccat	caaagtctac	agcgtcaaca	cgaaagaact	840
taagcagaag	ggtggaaagc	tgaatccgga	gcttcttggaa	aaccgcggga	agtacaacga	900
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aaagcaagta	tcctgctgga	acacacagaa	aatgccactg	aggatgaaga	ataccgacgt	1020
agtctacact	agttctcgct	ttgtcttgg	aacggacatt	tcggttgata	gcaagggcgg	1080
cctctggttc	atgtctaacf	gcttccgccc	tataaggaaa	tcagaaaaat	tcaaatatga	1140
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ttgcgatatg	aatgcataaa	agttaattt	caacccaaga	agaagaccta	aagaggctt	1260
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<210> 65

<211> 170

<212> PRT

<213> Lutzomyia longipalpis

<400> 65

Met	Gln	Ser	Lys	Ile	Leu	Ser	Phe	Val	Leu	Phe	Thr	Leu	Ser	Leu	Gly	
1									5					10		15

Tyr	Val	Leu	Gly	Glu	Thr	Cys	Ser	Asn	Ala	Lys	Val	Lys	Gly	Ala	Thr	
20											25			30		

Ser	Tyr	Ser	Thr	Thr	Asp	Ala	Thr	Ile	Val	Ser	Gln	Ile	Ala	Phe	Val	
35											40			45		

Thr	Glu	Phe	Ser	Leu	Glu	Cys	Ser	Asn	Pro	Gly	Ser	Glu	Lys	Ile	Ser	
50											55		60			

Leu Phe Ala Glu Val Asp Gly Lys Ile Thr Pro Val Ala Met Ile Gly
 65 70 75 80

Asp Thr Thr Tyr Gln Val Ser Trp Asn Glu Glu Val Asn Lys Ala Arg
 85 90 95

Ser Gly Asp Tyr Ser Val Lys Leu Tyr Asp Glu Glu Gly Tyr Gly Ala
 100 105 110

Val Arg Lys Ala Gln Arg Ser Gly Glu Glu Asn Lys Val Lys Pro Leu
 115 120 125

Ala Thr Val Val Val Arg His Pro Gly Thr Tyr Thr Gly Pro Trp Phe
 130 135 140

Asn Ser Glu Ile Leu Ala Ala Gly Leu Ile Ala Val Val Ala Tyr Phe
 145 150 155 160

Ala Phe Ser Thr Arg Ser Lys Ile Leu Ser
 165 170

<210> 66
<211> 712
<212> DNA
<213> Lutzomyia longipalpis

<400> 66		
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gaaacatgct caaatgctaa ggttaaggga gctacctttt attccacaac ggatgccaca	180	
attgttaagcc aaattgcctt tgtgactgaa ttctccttgg aatgctcaaa tcctggatcc	240	
gagaaaatct ccctatttgc tgaagtcgat ggcaaaatta ctccctgttgc catgatcggg	300	
gataccacct accaggtgag ctggaatgaa gaggttaata aggctagaag tggtgactac	360	
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gaagagaaca aggtcaaacc actagcaacc gttgttggc gacatccagg aacatacact	480	
ggaccatgg tcaattccga aatcctcgca gctggcttca ttgctgttgc tgccctacttt	540	
gctttctcaa cgcgaaagcaa aattcttcc taaagagacg cagcatgaaa tttcacaaaa	600	
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<210> 67
<211> 73

<212> PRT

<213> Lutzomyia longipalpis

<400> 67

Met Val Ser Ile Leu Leu Ile Ser Leu Ile Leu Asn Leu Leu Val Phe			
1	5	10	15

Tyr Ala Lys Ala Arg Pro Leu Glu Asp Ile Ser Ser Asp Leu Ser Pro		
20	25	30

Asp Tyr Tyr Ile Thr Glu Gly Tyr Asp Gly Val Lys Glu Lys Arg Glu		
35	40	45

Ile Glu Leu Val Pro Val Thr Phe Gly Ile Phe Asn Ile His Thr Thr		
50	55	60

Pro Ala Pro Arg Ile Thr Phe Glu Trp		
65	70	

<210> 68

<211> 379

<212> DNA

<213> Lutzomyia longipalpis

<400> 68

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ttattacatc actgaaggct atgacggtgt gaaggagaag agagagatcg aacttgtacc	180
tgtgacattt ggaatattta atatacatac aacacctgct cccagaatta cctttgaatg	240
gtaaaaaaaaatc caagaagaat ttatgatttt atttttcctt ccattggat ggattgtaa	300
tcagcataaaa acgccgttaa aatgaattt ttaataaaaa aaaattattc caaaaaaaaaa	360
aaaaaaaaaaaa aaaaaaaaaa	379

<210> 69

<211> 76

<212> PRT

<213> Lutzomyia longipalpis

<400> 69

Met Lys Leu Phe Cys Leu Ile Phe Val Val Phe Val Ala Leu Glu Val			
1	5	10	15

Cys Ile Glu Thr Val Lys Ala Met Glu Ala Thr Glu Glu Ile Ser Val		
20	25	30

Lys Leu Gln Asp Asp Ala Asn Glu Pro Asp Asp Ser Leu Asp Leu Asp
 35 40 45

Glu Gly Leu Pro Asp Ala Phe Asp Glu Asp Tyr Asn Asn Gln Ala Glu
 50 55 60

Tyr Lys Pro Asn Pro Arg Gly Asp Tyr Arg Arg Arg
 65 70 75

<210> 70
<211> 526
<212> DNA
<213> *Lutzomyia longipalpis*

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tatctgtaaa attgcaagat gatgcgaatg aacctgatga ctctctggat ttagacgaag	180
gtcttcctga tgcattcgat gaggactata ataatcaggc tgagtacaag ccgaatcccta	240
gaggggacta cagaagacga taattaatat aaattcagga aaacactcta aaaatttcca	300
attgactcta cttaaacga tttaataacctt acctacacta aataccatat gcaataattt	360
tgttttaatt atttagtgca agatctacta gtttcagttc atattttggg actttccgc	420
ctttctctcg atggaaaaat gattttacgg attcttaatt ttcattgtac agagttaata	480
aaacaattga aagcaattaa aaaaaaaaaa aaaaaaaaaa aaaaaaa	526

<210> 71
<211> 22
<212> DNA
<213> Artificial sequence

<220>
<223> Oligonucleotide primer

<400> 71	22
aagtactcta gcaattgtga gc	

<210> 72
<211> 22
<212> DNA
<213> Artificial sequence

<220>
<223> Oligonucleotide primer

<400> 72	22
ctcttcgcta ttacgccagc tg	

<210> 73
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> Oligonucleotide primer

<400> 73
tctcgggaag cgccgcattg tgtt

24